

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SALEM DISTRICT OFFICE
MARYS PEAK RESOURCE AREA

**ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT
IMPACT
FOR
MARYS PEAK WATERSHED RESTORATION AND ROAD
DECOMMISSIONING**

EA NUMBER: OR-080-03-5

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Summary: This document is an environmental assessment and finding of no significant impact for the road decommissioning, culvert replacement and conifer release projects listed and briefly described in Table 1.

Table 1: Description and Location of Proposed Projects

	PROJECT 1	PROJECT 2	PROJECT 3	PROJECT 4	PROJECT 5
	Road Decommissioning	Culvert Replacement	Thinning Alders	Scattered Conifer Release	Patch Cuts
Project Description	Approximately 4 miles of road would be decommissioned. See pages 16 -17 for a detailed description of the project.	Three existing drainage structures on three major crossings of the South Fork Alsea River Access Road would be replaced and a temporary bypass would be constructed adjacent to each operation. See pages 17-19 for a detailed description of the proposed project.	Planted conifers in an ongoing riparian project (approximately 34 acres along 1.2 miles of stream) would be released by thinning alders. See pages 19-20 for a detailed description of the proposed project.	Scattered conifers in the proposed project areas (approximately 70 acres along 6 miles of stream) would be released from competition by alders. See page 20 for a detailed description of the proposed project	Two patch openings (4 acres and 1 acre) would be created in alder dominated stands and conifers planted. See pages 20-21 for a detailed description of the proposed project.
Location	<u>Rd. 14-8-31</u> (T14S, R8W, Sec. 31, 32; T15S, R8W, Sec. 5) <u>Rd. 14-8-32.1</u> (T14S, R8W, Sec.	T15S, R6W, Sec 6, NE of NW, W.M. (crossing South Fork Alsea River) T14S, R7W,	T15S, R8W, Sec. 16 (Bear Creek and tributaries); Sec. 23 (East Fork Lobster and tributaries); Sec.	T15S, R8W, Sec. 15 (Lobster Creek and tributaries); Sec. 16 (Bear Creek and tributaries	T15S, R8W, Sec. 26 (4 acres adjacent to South Fork Lobster Creek) T15S, R8W, Sec.

	PROJECT 1 Road Decommissioning	PROJECT 2 Culvert Replacement	PROJECT 3 Thinning Alders	PROJECT 4 Scattered Conifer Release	PROJECT 5 Patch Cuts
	32; T15S, R8W, Sec. 5) <u>Rd. 14-9-25</u> (T14S, R9W, Sec. 25) <u>Rd. 14-9-25.1</u> (T14S, R9W, Sec. 25) <u>Rd. 14-9-25.2</u> (T14S, R9W, Sec. 25) <u>Rd. 15-8-5.1</u> (T15W, R8W, Sec. 5) <u>Rd. 15-8-15.3</u> (T15S, R8W, Sec. 16) <u>Rd. 15-8-16</u> (T15S, R8W, Sec. 16) <u>Rd. 15-8-16.2</u> (T15W, R8W, Sec. 16) <u>Rd. 15-8-18.2</u> (T15S, R8W, Sec. 17) <u>Rd. 15-8-22.2</u> (T15S, R8W, 22, 23) <u>Rd. 15-8-22.5</u> (T15S, R8W, Sec. 21) <u>Rd. 15-8-35</u> (T15S, R8W, Sec. 25, 26, 35)	Sec. 36, W.M. (crossing Williams Creek) T14S, R7W, Sec. 36, W.M. (crossing Coleman Creek)	26 (Lobster Creek and tributaries)	and Lobster Creek tributaries); Sec. 22 (Lobster Creek and tributaries; East Fork Lobster Creek and tributaries); Sec. 23 (East Fork Lobster Creek and tributaries); Sec. 25 (South Fork Lobster and tributaries); Sec. 26 (Lobster Creek and tributaries); Sec. 35, 36 (Lobster Creek and tributaries)	35 (1 acre adjacent to South Fork Lobster Creek and Lobster Creek)
County	Benton, Lane	Benton	Lane	Lane	Lane
Land Use Allocation	LSR, Riparian Reserve	Matrix, Riparian Reserve	LSR, Riparian Reserve	LSR, Riparian Reserve	LSR, Riparian Reserve
Watershed	Five Rivers/Lobster	Upper Alsea River	Five Rivers/Lobster	Five Rivers/Lobster	Five Rivers/Lobster

Alternative 1, the proposed action, would decommission approximately four miles of road, build three temporary bypass roads to be used during the replacement of three culverts, and release conifers on approximately 110 acres by cutting and removing alders.

Alternative 2 would be the same as Alternative 1, except that alders cut in the conifer release projects would remain on site, and no yarding would occur.

Alternative 3 would be the same as Alternative 1, except that no temporary bypass roads would

be built, closing the South Fork Alsea Access Road to through traffic for the duration of the culvert replacement operations.

Alternative 4 is the “No Action” alternative in which all of the proposed treatments would be deferred.

The environmental analysis focuses on the following issues identified through scoping and by an interdisciplinary team of BLM resource specialists:

Table 2: Issues

Project	Issue	Alternative Developed to Address Issue
Projects 3, 4, and 5 Conifer Release	Yarding may cause disturbance to vegetation.	Alternative 2: Do not yard alders, leave on site.
Project 1 Temporary Bypass Roads for Culvert Replacement	Bypass roads may cause disturbance to vegetation and soil.	Alternative 3: Close South Fork Alsea Access Road instead of constructing bypass roads.

For further information on this project, contact Amy Haynes (503-315-5955), 1717 Fabry Road SE, Salem, Oregon, 97306.

Comments on the environmental assessment are due **May 28, 2003**.

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FINDING OF NO SIGNIFICANT IMPACT

Introduction

The Bureau of Land Management (BLM) has analyzed the potential effects of 4 miles of road decommissioning projects, three culvert replacement projects with temporary road bypasses, and three conifer release projects. The actions described in this environmental assessment (EA) are proposed to decommission 13 roads in the Five Rivers/Lobster Creek watershed; to replace three culverts in the Upper Alsea River watershed; to release conifers by thinning alder, and to create patch openings to allow planting of conifers adjacent to streams in the Five Rivers/Lobster Creek watershed. These actions would meet Riparian Reserve objectives as identified in the *Salem District Record of Decision and Resource Management Plan (RMP)*, as well as the Aquatic Conservation Strategy (ACS) objectives (*RMP*, pp. 5-6). These activities are supported by analysis found in the *South Fork Alsea Watershed Analysis* (USDI BLM 1995) for culvert replacement; and *Five Rivers/Lobster Creek Watershed Analysis* (USDA Forest Service 1997) for road decommissioning and conifer release. The EA is attached to and incorporated by reference in this finding of no significant impact (FONSI) determination.

The FONSI and the EA are being made available for public review prior to making a decision on the action. The public notice of availability for review will be published in the Corvallis Gazette-Times and through notification of interested individuals, organizations, and state and federal agencies. They will also be available for review on the Internet at this address: <http://www.or.blm/salem> (under planning).

FINDING OF NO SIGNIFICANT IMPACT DETERMINATION

Based on the analysis of information in the attached EA, my determination is that a new environmental impact statement or supplement to the existing *FEIS* is unnecessary and will not be prepared. The proposed action would not result in significant environmental impacts affecting the quality of the human environment greater than those addressed in the existing *FEIS*.

Finding Rationale

Under the alternatives analyzed, significant impacts on the quality of the human environment would not occur based on the following criteria:

1. The alternatives are in conformance with the following documents, which provide the legal framework for management of BLM lands in the Marys Peak Resource Area:

- *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (January 2001) and the *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (S&M FSEIS)*, November 2000) and 2001, 2002 Annual Species Review, *BLM Information Bulletin No. OR-2002-033*.

- *Salem District Record of Decision and Resource Management Plan (RMP)*, May 1995).

- *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement (FEIS, September 1994).*

- *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (April 1994) and the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (SEIS, February 1994).*

2. The action would be consistent with the Aquatic Conservation Strategy Objectives and promote development of older forest characteristics in the riparian reserves (See Appendix D, Aquatic Conservation Strategy Objectives Review Summary). The following table shows how this action relates to required components of the Aquatic Conservation Strategy (*RMP*, pp. 5-7):

RELATIONSHIP OF PROPOSED ACTION TO RELEVANT MANAGEMENT DIRECTION

Component	Relationship to this Action
Riparian Reserves	The projects would occur within Riparian Reserves. Management action/direction for Riparian Reserves include closing or obliterating roads based on potential effects to ACS objectives; improving existing culverts to accommodate 100-year floods; and application of silvicultural practices to acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives. (<i>RMP</i> , p. 11)
Key Watersheds	Projects 1, 3, 4 and 5 are within the key watershed portion of the Five Rivers/Lobster 6 th field watershed.
Watershed Analysis	The proposed project areas are located in the Upper Alsea River and Five Rivers/Lobster 5 th field watersheds. Watershed analysis has been completed (<i>South Fork Alsea Watershed Analysis</i> , USDI BLM, Oct. 1995 and <i>Lobster/Five Rivers Watershed Analysis</i> , USDA Forest Service, Jan., 1997). The proposed projects were recommended in those documents.
Watershed Restoration	Recommendations from the watershed analyses that promote watershed restoration provide part of the purpose and need for this proposed action. Effects to resources described in the Aquatic Conservation Strategy objectives (stream physical integrity, water quality, sediment regime, in-stream flows, species composition, etc.) are addressed in the Environmental Effects section of this EA.

3. The proposed action and alternatives are in conformance with the *RMP*, which describes the general management objectives, land use allocations, and management actions/direction for BLM-administered lands in the Marys Peak Resource Area.

4. The alternatives are consistent with other federal agency and State of Oregon land use plans and with the Benton and Lane Counties land use plan and zoning ordinances. Any permits associated with the implementation of this project would be obtained and requirements would be met.

5. There are no flood plains, or prime or unique farmlands within the sale area.

6. No known cultural resources or paleontological resources occur in the project area. A post-harvest survey would be done upon completion of the project according to *Protocol For Managing Cultural Resources on Lands Administered by the BLM in Oregon; Appendix D* dated August 5, 1998.

7. Project 1: Due to the close proximity of unsurveyed suitable habitat (<0.25 miles), this project would be considered a **may affect, likely adverse affect** to spotted owls and marbled murrelets if implemented during the critical part of the breeding period (March 1 to August 5). If implemented during the period August 6 to September 30, project activities would be considered a **may affect, not likely adverse affect**. Between October 1 and February 28, the proposed projects would be considered **no effect**.

Project 2: Since these project areas occur within a well traveled scenic byway with very little unsurveyed suitable habitat adjacent and has a relatively high ambient noise level, the potential for noise disturbance to spotted owls and marbled murrelets is unlikely. Therefore, this project is considered to be “**no effect**” to these listed species.

Projects 3, 4, and 5: Due to the close proximity of unsurveyed suitable habitat (<0.25 miles), this project would be considered a **may affect, not likely adverse affect** if implemented during the period August 6 to September 30 and a **no effect** between October 1 and February 28.

All projects: Formal consultation with the Fish and Wildlife Service has addressed these potential impacts to federally listed wildlife species. A Biological Opinion (BO) received from the Service on April 4, 2002 (reference # 1-7-02-F-422) concluded that these types of projects would not likely result in jeopardy to any listed species. All applicable Terms and Conditions required by the BO have been incorporated into the design features of the proposed project. No significant effects are anticipated to occur to any other Special Status Species or Special Attention Species (including Survey and Manage Species).

8. Projects 1 and 2: These projects meet the terms and conditions established in the *Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of land Management Programmatic Activities in Northwestern Oregon, February 25, 2003*. The effect determination for road decommissioning and culvert replacement in the Coast Range Province is **not likely to adversely affect** Coho salmon in the Coast Range.

Projects 3, 4 and 5: The Level 1 Team which assesses potential impacts to listed fish determined that the proposed project is a “**May Affect, Not Likely to Adversely Affect**” Oregon coast coho salmon. The Biological Assessment was submitted to the National Marine Fisheries Service (NMFS) during April 2003. The Letter of Concurrence, responding to that BA is expected in May 2003. No decision will be made on these three projects until the Letter of Concurrence is received.

9. The proposed action is within the coastal zone as defined by the Oregon Coastal Management

Program. This proposal is consistent with the objectives of the program, and the state planning goals, which form the foundation for compliance with the requirements of the Coastal Zone Act. Management actions/directions found in the RMP were determined to be consistent with the Oregon Coastal Management Program.

10. There are no known sites of any Special Status or Special Attention plant, fungus, and lichen or bryophyte species within the project areas. Surveys were required for all projects except those occurring within the road prism, and no new sites were found in the proposed project areas.

11. No hazardous materials or solid waste would be created in the proposed project areas.

12. The proposed project areas do not qualify for potential wilderness nor have any been nominated for an Area of Critical Environmental Concern.

13. Project design features would assure that potential impacts to water quality would be in compliance with the State of Oregon In-stream Water Quality Standards and thus the Clean Water Act.

14. The smoke generated from burning piles would be within the standards set by the Oregon Smoke Management Plan, which considers national air pollution standards and complies with the Clean Air Act. All burning would be conducted by BLM personnel.

15. In accordance with the *RMP* (see pp. 21-22), the amount of late successional forest (i.e., 80 years and older) on federal lands was determined for the Five Rivers/Lobster and the Upper Alsea watersheds. The 80+ forest age classes occur on approximately 37 percent of the federal lands in the Upper Alsea Watershed and on approximately 29 percent of the federal lands in the Five Rivers/Lobster Watershed. This exceeds the *RMP* standard of 15 percent. No late-successional forest stands would be affected by this action.

16. Each of these project areas was identified in its respective watershed analysis as an opportunity to promote growth of conifers in a Riparian Reserve dominated by hardwoods; close unnecessary roads; and replace failing, unsafe culverts or culverts not suitable for fish passage.

The actions are local in nature; potential adverse impacts would be short-term. Impacts were determined based on research, observation, professional training, and experiences by the interdisciplinary team of natural resource specialists. Determining such environmental effects reduces the uncertainties to a level that does not involve highly unknown, controversial or unique risks. The design features identified in the EA would assure that no significant site-specific or cumulative impacts would occur to the human environment other than those already addressed in the *S&MFSEIS*, *FEIS* and *SEIS*.


Cindy Enstrom
Marys Peak Field Manager

4/23/03
Date

ENVIRONMENTAL ASSESSMENT

I. PURPOSE AND NEED

A. Introduction

The proposed action would be located in Benton and Lane Counties, within the Five Rivers/Lobster Creek and Upper Alsea River watersheds (see General Vicinity map in Appendix B). The conifer release and road decommissioning projects are approximately 20 miles southwest of Philomath, Oregon and the culvert projects are approximately 15 miles southwest of Philomath, Oregon. All actions would occur on lands classified as Late Successional Reserve (LSR) and Riparian Reserve (RR), except the culvert replacement/road bypass projects, which would occur on Matrix and Riparian Reserve lands (FONSI, Table 1). The actions described and analyzed herein are proposed for the purposes of meeting Riparian Reserve and Aquatic Conservation Strategy (ACS) objectives as stated in the *Salem District Resource Management Plan and Record of Decision (RMP, May 1995)*.

The proposed road decommissioning projects would close approximately 4 miles of unnecessary roads, including approximately 1.5 miles of Road 15-8-35.

The proposed culvert replacements with construction of temporary bypasses would replace three drainage structures on the South Fork Alsea Access Road.

The proposed conifer release projects would restore species composition on approximately 110 acres (along approximately 7 miles of stream), which existed prior to logging, and provide conifers for coarse woody debris recruitment to maintain and improve stream habitat. Species composition and structural diversity would be enhanced.

Table 1 in the FONSI briefly describes the proposed projects and their location. Detailed project descriptions begin on page 16.

B. Purpose and Need

Project 1 (Road Decommissioning)

The proposed project is located in Five Rivers/Lobster Creek, a key watershed. The *RMP* requires reducing existing road mileage within key watersheds (*RMP* p. 63). The primary goal of the proposed project is to assist in restoring and improving ecological health of the watershed and aquatic systems within the watershed, while honoring existing road right-of-way agreements. All roads proposed for decommissioning except 15-8-35 are dead end spur roads, no longer needed for management. Road 15-8-35 is a redundant road constructed parallel to South Fork Lobster Creek. Road 15-8-15 could serve the same function as 15-8-35. The proposed road decommissionings would remove possible current and future sedimentation sources and meet Aquatic Conservation Strategy (ACS) requirements by "...closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to ACS objectives and considering short-term and long-term transportation needs" (*RMP*, p. 62).

Project 2 (Culvert Replacements with Temporary Bypasses)

The primary goal of the proposed project is to assist in restoring and improving ecological health of watersheds and aquatic systems by replacing failing culverts and improving fish passage and storm flow capacity. Three culverts along the length of the South Fork Alsea Access Road, a heavily used Backcountry Byway, have exceeded their design life and are currently in the process of failing. Temporary bypass roads would be built to accommodate traffic during construction. The proposed projects would meet ACS requirements by “reconstructing...drainage features (culverts, etc) that pose a substantial risk” (*RMP*, p. 62).

Project 3 (Conifer Release—Alder Thinning), Project 4 (Scattered Conifer Release), Project 5 (Patch Cuts)

Project 3 consists of pure alder stands that were thinned and underplanted with conifers between 1993 and 1995. The project areas now need further thinning to maintain growth and ensure survival of the planted conifers. Project 4 would release scattered conifers along approximately 6 miles of stream in the proposed project areas by cutting competing alders. Alders in two patches (Project 5) would be cut and removed and all brush would be cut to create openings in which western red cedar and western hemlock would be planted, restoring plant diversity to the two proposed project areas.

The purpose of the all three proposed projects is to release riparian conifer trees, as directed in the *RMP* (p. 28), improving fish habitat over the long term by providing long term high quality large wood recruitment for streams, and restoring large conifers in Riparian Reserves (*RMP* p. 7).

C. Tiering

This environmental assessment (EA) is tiered to the *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M ROD, January 2001) and the *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M FSEIS, November 2000). The S&M ROD amends a portion of the Northwest Forest Plan by adopting new standards and guidelines for Survey and Manage, Protection Buffers and other mitigating measures.

This environmental assessment (EA) is also tiered to the *Salem District Record of Decision and Resource Management Plan* (*RMP* May, 1995) and the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement* (*PRMP/FEIS*, September 1994). The *FEIS* analyzed broad scope issues and impacts within the Northwest Forest Plan’s direction to meet the need for forest habitat and forest products (p. 1). The *RMP* provides a comprehensive ecosystem management strategy for BLM-managed lands in the Salem District in strict conformance with the *Northwest Forest Plan* and the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (April 1994).

This EA is also tiered to the *Western Oregon Program-Management of Competing Vegetation Final Environmental Impact Statement (VMFEIS)*, February 1989) and the *Western Oregon Program-Management of Competing Vegetation Record of Decision* (August 1992). The *VMFEIS* analyzed broad scope issues and impacts for an integrated vegetation management strategy consisting of various treatments. The *Record of Decision* identifies treatments and provides processes to meet vegetation management objectives (p. 3) and resource management goals (p. 33). This EA will analyze vegetation management treatments such as release treatments promoting survival and growth of desired vegetation.

This EA is also tiered to the *Northwest Area Noxious Weed Control Program Final EIS* (USDI, 1985) and the associated *Record of Decision* (USDI, April 7, 1986), and the *Supplement to the Northwest Area Noxious Weed Control Program* (USDI, March 1987) and its associated *Record of Decision* (May 5, 1987). This EA will analyze vegetation management treatments such as site preparation and reforestation in the proposed project area.

These documents provide analysis of broad scope issues and impacts resulting from managing forest ecosystems on a regional and Westside Salem basis. All of these documents are available for review in the Salem District Office. This EA is a site-specific analysis of the proposed actions and the alternatives prepared under the general guidance provided in the documents listed above. Additional information about the proposed projects is available in the Project EA file.

D. Management Direction

Management activities are required to meet Land Use Allocation (LUA) objectives listed in the *RMP*. Additionally, activities within Late Successional Reserves (LSR) must conform to guidance found in the appropriate LSR Assessment, in this case, the *Late Successional Reserve Assessment, Oregon Coast Province—Southern Portion (LSRA)*, June 1997). All must also use watershed analysis as the basis for developing project-specific proposals (*RMP*, p. 71). *RMP* direction for Riparian Reserves and LSRs are listed below, by project. Table 3 illustrates watershed analysis and *LSRA* findings and recommendations related to each project.

Riparian Reserve Direction

Project 1

“Meet ACS objectives by...closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to ACS objectives and considering short-term and long-term transportation needs.” (*RMP*, p. 62)

Reduce existing road mileage within key watersheds (*RMP*, p.63).

Project 2

“...improve existing culverts...and other stream crossings determined to pose a substantial risk to riparian conditions. New structures and improvements will be designed to accommodate at least the 100-year flood, including associated bed load and debris.” (*RMP*, p. 63)

Projects 3, 4, 5

Utilize silvicultural practices designed to provide specific desired vegetation characteristics within Riparian Reserves (*RMP*, p.11).

LSR Objectives

Project 1

“Reduce road density by closing minor collector and local roads in areas or watersheds where water quality degradation...or other road-related resource problems have been identified.”

Projects 3, 4, 5

“Design projects to improve conditions for fish if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible.” (*RMP*, p. 27)

Table 3 Watershed Analysis and LSRA Recommendations Related to Proposed Projects

PROJECT	WATERSHED ANALYSIS FINDINGS	WATERSHED ANALYSIS RECOMMENDATIONS	LSRA RECOMMENDATIONS
Project 1 Road Decommissioning	High road densities in the watershed (<i>L/5R</i> ¹ , p. 70)	Reduce road density and stabilize closed roads (<i>L/5R</i> , Table 30, p.103)	Not specifically addressed
Project 2 Culvert Replacement	Drainage structures installed during the 50's and 60's are beginning to fail due to deterioration...structures are undersized by today's standards. (<i>SFWA</i> ² , p. 95)	Upgrade existing structures not adequate to accommodate a 100-year flood event (<i>SFWA</i> , p. 96).	Project 2 sites are in Matrix
Project 3 Conifer Release (Alder Thinning)	Low levels of LWD in the watershed (<i>L/5R</i> , p. 70)	Release/maintain riparian planting projects as needed (<i>L/5R</i> , East Fork and Upper Lobster Subwatershed maps); restore LWD levels (<i>L/5R</i> , Table 30, p.103)	Site conversion is an appropriate management activity when hardwoods are established in original conifer sites. (<i>LSRA</i> , p. 45)

PROJECT	WATERSHED ANALYSIS FINDINGS	WATERSHED ANALYSIS RECOMMENDATIONS	LSRA RECOMMENDATIONS
Projects 4 and 5 Conifer Release (Release Scattered Conifers; Patch Cuts)	Low levels of LWD in the watershed (L/5R, p. 70)	Plant conifers in riparian areas; restore LWD levels (L/5R, Table 30, p.103)	Site conversion is an appropriate management activity when hardwoods are established in original conifer sites. (LSRA, p. 45)

1. *Lobster/Five Rivers Watershed Analysis*, USDA Forest Service, 1997
2. *South Fork Alsea Watershed Analysis*, USDI BLM, 1995

E. Scoping and Issues

Scoping

Public involvement efforts during the scoping process included the following:

The general areas were shown as LSR, Matrix and Riparian Reserves in the *RMP*. These documents were widely circulated in the state of Oregon and elsewhere, and public review and comment were requested at each step of the planning process.

A description of the proposal was included in the Salem Bureau of Land Management *Project Update* mailed in March 2003 to more than 1200 individuals and organizations on the mailing list.

A news release announcing availability of the EA for public review and comment will be submitted to the *Corvallis Gazette Times*.

The EA and FONSI will be available for review at the Salem District Office and on the Internet at Salem BLM's website, <http://www.blm/salem> (under planning).

Issues

The environmental analysis focuses on the following issues identified through scoping and by an interdisciplinary team of BLM resource specialists:

Table 4: Issues

Project	Issue	Alternative Developed to Address Issue
Projects 3, 4, and 5 Conifer Release	Yarding may cause sedimentation in fish bearing streams	Alternative 2: Do not yard alders, leave on site.

Project	Issue	Alternative Developed to Address Issue
Project 1 Temporary Bypass Roads for Culvert Replacement	Bypass roads may cause disturbance to vegetation and soil	Alternative 3: Close South Fork Alsea Access Road instead of constructing bypass roads.

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

A. Introduction

This section describes alternatives identified by the interdisciplinary (ID) team that helped develop the proposed action. There are three action alternatives and a no action alternative. Treatments incorporated in the proposed action conform with standard practices and design features intended to reduce the environmental effects. They comply with Best Management Practices (*RMP*, Appendix C) and the Standards and Guidelines specified in Appendix A of the *ROD*.

Environmental Features

The following environmental features concerning the proposed action were identified by an interdisciplinary (ID) team of BLM natural resource specialists representing various fields of science (see Section IV, ID Team Members). These environmental features will be discussed in Chapters II and III. Additional environmental features are discussed in Appendix A.

Vegetation/Riparian: Effects on native plant species. Impacts to Special Status Species or *SEIS* Special Attention Plant Species. Effects on spread of noxious weeds. Effects on attainment of species composition and structural diversity objectives in the Aquatic Conservation Strategy (*RMP*, p. 5-6)

Soils: Effects on long term soil productivity

Fuels: Effects on fuel loading and fire hazard

Water: Effects on stream flow, channel conditions, and water quality. Effects on attainment of the stream flow and basin hydrology, channel function or water quality objectives in the Aquatic Conservation Strategy

Fisheries: Effects on long term instream large wood recruitment. Effects on stream temperature (shading). Effects on special status species. Effects on resident and anadromous fish and their habitat.

Wildlife: Effects on wildlife species which BLM by law and policy is required to protect maintain or recover. Effects on terrestrial habitats within the project areas and across each watershed.

B. Summary of Alternatives

Table 5 summarizes the proposed action and alternatives. See Appendix B for maps.

Project	Project Location	6 th Field Watershed (Adjacent Streams)	Actions by Alternatives
1 Road decommissioning	Rd 14-8-31 Rd 14-8-32.1 Rd 14-9-25 Rd 14-9-25.1 Rd 14-9-25.2 Rd 15-8-5.1 Rd 15-8-16 Rd 15-8-16.2 Rd 15-8-16.3 Rd 15-8-18.2 Rd 15-8-22.2 Rd 15-8-22.5 Rd 15-8-35	Upper Lobster (Little Lobster Cr and tributaries, tributaries to Wilkinson Cr, Bear Cr and tributaries, Lobster Cr and tributaries, tributaries to East Fork Lobster Cr, South Fork Lobster Cr)	Alternative 1: Decommission roads Alternative 2: Same as 1 Alternative 3: Same as 1 Alternative 4: No Action
2 Culvert replacement	15-6-6, NE of NW (crossing South Fork Alsea River) 14-7-36, SE of SE (crossing Williams Creek) 14-7-36, SW of NE (crossing Coleman Creek)	South Fork Alsea	Alternative 1: Replace culverts and construct temporary bypass roads Alternative 2: Same as 1 Alternative 3: Replace culverts, no temporary bypass; close South Fork Alsea Access Road for duration of operations Alternative 4: No Action
3 Conifer Release (thin alders)	15-8-16 15-8-26,35 15-8-36 15-8-23	Upper Lobster Creek (Bear Cr and tributaries, Lobster Cr, East Fork Lobster Cr and tributaries,	Alternative 1: Thin alders to approximately 50 trees per acre; yard Alders to road Alternative 2: Leave alders on site Alternative 3: Same as 1 Alternative 4: No Action
4 Conifer Release (release scattered conifers)	15-8-15 15-8-16 15-8-22 15-8-23 15-8-26 15-8-35 15-8-36	Upper Lobster (Lobster Cr and tributaries, South Fork Lobster Cr and tributaries, East Fork Lobster Cr and tributaries, Bear Cr and tributaries)	Alternative 1: Release scattered conifers by cutting alders; yard alders to road Alternative 2: Leave alders on site Alternative 3: Same as 1 Alternative 4: No Action
5 Conifer Release (patch cuts)	15-8-26 (5 acres) 15-8-35 (2 acres)	Upper Lobster (South Fork Lobster Cr, Lobster Cr)	Alternative 1: Cut alders in 5 acre and 2 acre patch cuts and plant conifers; yard alders to road Alternative 2: Leave alders on site Alternative 3: Same as 1 Alternative 4: No Action

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

The proposed action is to decommission approximately 4 miles of unnecessary roads, including approximately 1.5 miles of Road 15-8-35, which is located within the South Fork Lobster Creek riparian zone. The trash rack structure located in South Fork Lobster Creek would be removed or minimized with this action, restoring natural large woody debris (LWD) transport.

Project Design Features

1. As much of the existing vegetation as possible would be preserved during decommissioning.
2. Where no advanced vegetation has encroached on the road surface, the road bed would be ripped to encourage more natural moisture penetration.
3. All cross drain culverts would be removed and replaced with drain dips. Additional drain dips would be installed at reasonable intervals to reduce scour risk and more closely approximate natural hydrologic processes.
4. Available logs, organic debris or slash created by the operation would be scattered on the exposed surface.
5. Where segments of unstable roadbed are identified, measures would be taken to avoid future failure, which could include pulling back sidecast embankment material, which would reduce the slope loading.
6. Soil disturbing activities would be limited to the existing road prism.
7. Entrances would be blocked to all motorized traffic and where possible, alder would be felled and left in the road to further discourage traffic.
8. Roads would be outsloped in areas where drainage is a concern, which would help restore a more natural surface runoff pattern.
9. On Road 15-8-35 only, the following additional steps would be taken:
 - Sidecast embankment material would be pulled back, but only to the extent that no damage would occur to conifer trees and their roots, as well as any tree species located within the South Fork Lobster Creek riparian zone.
 - The I-beam structure (trash rack) located in South Fork Lobster Creek would be removed to a minimum of three feet below the stream bed elevation, to restore the natural transport of LWD downstream.
10. Where the roadbed crosses streams, the stream channel proportions, gradients and side slopes would be restored to approximate pre-construction condition.
11. Excess fill removed from these locations would be placed adjacent to cut slopes to partially restore original contours, or disposed of at stable locations outside the floodplain.
12. Power equipment would be refueled at least 200 feet (or as far as possible) from streams, and immobile equipment would have absorbent pads placed to capture any fuel/oil spillage. During periods of non-use equipment would be stored a minimum 200 feet from streams.
13. For any culvert located on live streams, removal activities would occur during the summer period with lowest streamflow (July 1 to August 31), and comply with *Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources*.

14. Terms and conditions found in *Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of Land Management Programmatic Activities in Northwestern Oregon*, February 25, 2003.
15. Road decommissioning activities, other than culvert removal, would be restricted to the dry season, generally June 1 to October 31. If feasible, projects would be implemented after July 7, and preferably after August 5 to avoid the critical nesting period for owls and murrelets.
16. To minimize noise disturbance to marbled murrelets, from April 1 through September 15, daily use of power equipment would be restricted to the period from two hours after sunrise to two hours before sunset.
17. All exposed mineral soil areas would be grass seeded with Oregon Certified (Blue Tagged) red fescue (*Festuca rubra*) at a rate equal to 40 pounds per acre.
18. If any Special Status or Special Attention Species (vegetative, terrestrial or aquatic) are found in the project areas, appropriate mitigation measures, as described in the Salem District *RMP*, would be implemented.
19. The Resource Area biologist would be notified if any additional sites of federally listed wildlife species are found occupying stands within 0.25 miles of project areas.
20. If any sites of cultural significance are discovered in the project area, appropriate mitigation measures as described in the Salem District *RMP* would be implemented

Project 2 (Culvert Replacement, Constructing Temporary Bypasses)

The existing drainage structures on three major crossings of the South Fork Alsea Access Road are in need of replacement. The excavation/embankment associated with the improvements would be confined to the existing road prism, except that a narrow temporary bypass route would be constructed adjacent to each operation. The bypass routes would require removal of localized riparian vegetation, minor excavation, and temporary crossings over live streams.

Project Design Features

1. Existing structures would be replaced with countersunk culverts designed to meet 100-year peak flood events and hydraulic capacity would compensate for expected deposition in the culvert bottom.
2. Excavation would be confined to the existing road prism, except that a narrow temporary bypass route would be constructed adjacent to each operation.
3. The temporary bypass embankment would be constructed out of clean pit run material to minimize downstream sedimentation. The same material would be used as interior backfill within the barrel of the new structure.
4. The area of disturbance for the by-pass road and water diversion would be kept as narrow as practical to minimize short term disturbance to the stream and long term disturbance to the site.
5. Excavated fill material removed during replacement of culverts would be temporarily stored on, or immediately adjacent to, the existing road. Excavated material deemed excess or unsuitable for reuse should be end hauled to suitable, stable locations nearby (likely Whitehouse rock pit).

6. Waste material would be placed on slopes less than 50% and not adjacent to head walls or streams. Waste piles would be sloped with gentle back slopes approximately 2:1. If located in areas where erosion could affect streams, waste piles greater than approx 200 ft² in surface area would be seeded with Oregon Certified (Blue Tagged) red fescue at a rate equal to 40 pounds per acre.
7. Felled trees, slash and cut brush on the temporary bypass road locations would be removed and disposed of in the following manner:
 - With approval of the Area fisheries biologist, larger material would be placed in adjacent stream channels, left on site, or placed down stream of culverts.
 - Minimal amounts of brush would be scattered on sited in the areas away from the road surface, but no accumulations would be created.
 - Accumulated piles of debris would be disposed of by chipping or would be end hauled and deposited at an approved site (likely Whitehouse rock pit).
8. To minimize sedimentation downstream of the project sites, stream water would be pumped and/or piped through construction areas.
9. *Guidelines for Salmonid Passage at Stream Crossings* (NMFS SW Region, Sept. 2001) would be followed as well as terms and conditions found in *Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of land Management Programmatic Activities in Northwestern Oregon*, February 25, 2003.
10. Culvert replacement activities would occur during the summer period with lowest streamflow (July 1 to August 31), and comply with *Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources*.
11. Each culvert would be designed to be as wide as bankful conditions.
12. Pipes would be installed at less than 2% gradient (most likely 0%), and would be countersunk into the streambed to a minimum one-foot depth.
13. Use of riprap would be minimized and limited to use as scour protection on the road embankment adjacent to the culvert.
14. Power equipment would be refueled at least 200 feet (or as far as possible) from streams, and immobile equipment would have absorbent pads placed to capture any fuel/oil spillage. During periods of non-use equipment would be stored a minimum 200 feet from streams.
15. The road running surface would be repaved and, if funding is available, striped to match the existing road.
16. The bypass routes would be removed and restored to approximate the original contour.
17. All exposed mineral soil areas would be grass seeded with Oregon Certified (Blue Tagged) red fescue (*Festuca rubra*) at a rate equal to 40 pounds per acre, and planted with conifer tree species where appropriate openings exist.
18. Stream banks would be stabilized where necessary using on site logs and boulders.
19. The Williams Creek crossing may require concrete headwalls to be installed to compensate for the angle of the stream crossing in relationship with the Access Road. If this is the case, the following design feature would be followed:

Fresh concrete (cured less than 72 hours), contaminated wastewater, welding slag and grindings, concrete saw cutting by-products, and sandblasting abrasives would be contained and not come into contact with streams.
20. If any Special Status or Special Attention Species (vegetation, terrestrial or aquatic) are found on in the project areas, appropriate mitigation measures, as described in the Salem District *RMP* would be implemented.

21. The Resource Area biologist would be notified if any additional sites of federally listed wildlife species are found occupying stands within 0.25 miles of project areas.
22. If any sites of cultural significance are discovered in the project area, appropriate mitigation measures as described in the Salem District *RMP* would be implemented.

Project 3 (Conifer Release --Alder Thinning)

Pure alder stands were thinned to a 20 foot spacing (110 trees per acre) and planted with conifers between 1993 and 1995. The planted conifers now need further release to maintain growth. Alders would be thinned to a 30 foot spacing and removed, leaving approximately 50 alders per acre on approximately 34 acres along approximately 1.2 miles of stream.

Project Design Features

1. Alders only would be thinned to approximately 50 trees per acre on a 30 ft. by 30 ft. spacing. All other species would be reserved from cutting. Existing green conifers would be protected from damage by falling and yarding alders.
2. No alders would be cut within the original project stream buffers (minimum 25 feet) with the following exception:
 - Where stream shading is not an issue and safety allows, alders may be felled into the stream and remain on site.
 - For safety and/or where stream shading is not an issue, alders close to the road and leaning into the road would be taken
3. Outside the stream buffers where safety allows, if a substantial portion of the cut alder can reach the adjacent stream, then the tree would be felled into the stream and left.
4. There would be no yarding through any streams.
5. No potential nest trees for red tree voles, northern spotted owls or marbled murrelets would be cut.
6. All heavy equipment would remain on the existing roads. Logs would be yarded using a skidder winch line, a small mobile yarder or similar equipment.
7. Yarding would stop if excessive sediment transport becomes a threat to water quality during very wet weather.
8. Timber hauling would be on rock surfaced roads and hauling would stop if excessive sediment transport becomes a threat to water quality during very wet weather.
9. Power equipment would be refueled at least 200 feet (or as far as possible) from streams. During periods of non-use equipment would be stored a minimum 200 feet from streams.
10. As much as practical, limbs, tops and brush should be left scattered on site, or treated in the following manner:
 - Cull material including limbs and tops that end up at landing points would be piled.
 - With approval of the Area fisheries biologist, larger material would be placed in adjacent stream channels.
 - Material would be piled as far as possible from direct contact with reserve trees and snags.
 - Accumulated piles of debris would be disposed of by chipping or burning.

- Piles to be burned would be covered and subsequently burned in the fall under the supervision of the Area Fuels Specialist. Piles would be burned on or near the road prism.
- 11. All exposed mineral soil areas would be grass seeded with Oregon Certified (Blue Tagged) red fescue (*Festuca rubra*) at a rate equal to 40 pounds per acre
- 12. To minimize noise disturbance to spotted owls and marbled murrelets, the operation would take place after August 5 and before March 1 of the following year
- 13. To minimize noise disturbance to marbled murrelets, no mechanical equipment would be operated from two hours before sunset until two hours after sunrise between August 5 and September 30.
- 14. If any Special Status or Special Attention Species (vegetative, terrestrial or aquatic) are found in the project areas, appropriate mitigation measures, as described in the Salem District *RMP* would be implemented.
- 15. The Resource Area biologist would be notified if any additional sites of federally listed wildlife species are found occupying stands within 0.25 miles of project areas.
- 16. If any sites of cultural significance are discovered in the project areas, appropriate mitigation measures as described in the Salem District *RMP* would be implemented.
- 17. All normal fire regulations for operating power driven machinery would be complied with.

Project 4 (Scattered Conifer Release)

The proposed action would release scattered Douglas-fir, western red cedar and western hemlock along streams in the project areas by cutting competing hardwoods. Conifers to be released vary in size from just over one inch in diameter to approximately 20 inches, and hardwood diameters vary up to 20 inches. The proposed project is approximately 70 acres, along approximately 6 miles of stream.

Project Design Features

Project design features are identical to Project 3 with the following exceptions:

1. Alders would be cut around each conifer identified for release to allow approximately 60% of total potential light to reach each released tree. Only those overtopped trees that demonstrate a good chance for survival would be released.
2. No alders would be cut within stream buffers (minimum 25 feet) on perennial streams with the same exceptions as Project 3.
3. Western red cedar and/or western hemlock would be underplanted where appropriate.

Project 5: Conifer Release (Patch Cuts)

Hardwoods in two patches (4 acres and 1 acres) would be cut and removed. All brush would be cut in order to create openings in which western red cedar and western hemlock would be planted.

Project Design Features

Project design features are identical to Project 3 with the following exceptions:

1. All alders within designated areas (5 acres and 2 acres, respectively) would be cut and removed. All other tree species would be reserved.
2. Western red cedar and small amounts of western hemlock would be planted on a variable spacing, ranging from 10 to 20 feet apart.
3. Brush species expected to or competing with planted conifers would be cut.
4. Stream buffers (minimum 50 feet) would be established adjacent to Lobster Creek and South Fork Lobster Creek.

Alternative 2: Do Not Yard Alders in the 3 Conifer Release Projects

This alternative would leave all cut alders on the sites in **Projects 3, 4 and 5**. The project design would be identical to Alternative 1 except no yarding would occur.

Project design features for Projects 1 and 2 would remain the same as under Alternative 1.

Alternative 3: Replace Culverts in Project 2; Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

This alternative would close the South Fork Alsea Access Road to through traffic while culvert replacement occurs (**Project 2**). The road would be blocked at the construction site for up to 3 to 4 weeks during the summer. The project design would be identical to Alternative 1, except the temporary bypass roads would not be constructed.

Project design features for projects 1, 3, 4, and 5 would remain the same as under Alternative 1.

Alternative 4: No Action

All proposed treatments would be deferred.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT/ ENVIRONMENTAL EFFECTS FOR ALL ALTERNATIVES

The following descriptions are the environmental features affected by the proposed projects and associated activities and the environmental effects that would result from implementing the alternatives (see also, Appendix C, Summary of Environmental Effects). If there are no anticipated site-specific effects, if site-specific effects are considered negligible, or if the cumulative impacts described in the *PRMP/FEIS* are considered acceptable, then resource values are not described in this section. A documentation of “no effect” to resources where review is required by statute, regulation, or executive order is included in Appendix A (see *BLM Manual*, Sec. 1790, Appendix 5).

A. General

The proposed project areas are located in the Five Rivers/Lobster Creek and Upper Alsea River watersheds. The land use allocations (LUA) are Matrix, LSR, and Riparian Reserves. See FONSI, Table 1 for specific locations of individual projects.

B. Topography

The project areas are located on multiple aspects and elevations on slopes generally ranging from 10 to 60 percent.

C. Vegetation

Vegetation: Affected Environment

Project 1 (Road Decommissioning)

Vegetation adjacent to roads to be decommissioned varies from approximately 20-year-old Douglas-fir plantations to mature and old growth conifer stands. Most roads run primarily through Riparian Reserves, with the exception of Road 14-9-25.2, which is wholly in upland. See Table 6A for site specific descriptions

Some roads already have varying amounts of herbaceous and shrub vegetation beginning to grow on the road surface. Others are rocky and still used.

Table 6A: Vegetation in Road Decommissioning Projects

Road	Location (T-R-Sec)	Vegetation Type Adjacent to Road	Approximate Age
14-8-31	14S-8W-31, 32; 15S-8W-5	Douglas-fir plantation	20
14-8-32.1	14S-8W-32; 15S-8W-5	Mature DF/hardwood mix Douglas-fir plantation	100-130 20
14-9-25	14S-9W-25	Mature DF stand DF plantation	130 30
14-9-25.1	14S-9W-25	DF plantation	20
14-9-25.2	14S-9W-25	DF plantations	10-20
15-8-5.1	15S-8W-5	Mature DF, hardwood and mixed DF/hardwood stands DF plantation	70-150 20
15-8-15.3	15S-8W-16	Mature DF stand Hardwood stand DF plantation	140 40 20
15-8-16	15S-8W-16	Mature DF/hardwood mix DF plantation	140 20
15-8-16.2	15S-8W-16	Mature DF/hardwood mix DF plantation	140 20
15-8-18.2	15S-8W-17	Old growth conifer stand DF plantations	200 20-25

Road	Location (T-R-Sec)	Vegetation Type Adjacent to Road	Approximate Age
15-8-22.2	15S-8W-22	DF/hardwood mix & pure hardwood stands Old growth WH stand	40-50 200
15-8-22.5	15S-8W-21	Old growth DF stand Mixed DF/hardwood stand DF plantation	200 40-50 20
15-8-35	15S-8W-25,26,35	Mixed DF/hardwood stand DF plantations	40-50 20-30

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species

All of the proposed project areas are located within the road prism and have been surveyed previously. There are no known sites of any vascular plant, lichen, bryophyte or fungi special status or special attention species within the proposed project areas (road prism).

Management of Survey and Manage Species found as a result of any additional inventories would be accomplished in accordance with the *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (S&M ROD, January 2001)* and the *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (S&M FSEIS, November 2000)* and 2001 and 2002 annual species reviews, *BLM Information Bulletin No. OR-2002-033*. Any known sites would be withdrawn from any habitat altering activity or proposed mitigation would minimize any habitat disturbance.

Noxious weeds:

Several Oregon State listed noxious weed species are known from the project areas (Scot's broom, Canadian and bull thistles, St. John's wort and tansy ragwort). The majority of these known sites occur adjacent the existing roadways within the road prism.

Project 2 (Culvert Replacement with Temporary Bypass Roads)

South Fork Alsea crossing is in a 50 to 80 year old hardwood stand, composed mostly of alders. Williams Creek crossing is in a 25-year-old Douglas-fir plantation. Coleman Creek crossing is partly in a 50-year-old hardwood stand and partly in a 20-year-old Douglas-fir plantation. See Table 6B for site-specific descriptions.

Table 6B: Vegetation in Culvert Replacement Projects

Culvert Site	Location (T-R-Sec)	Vegetation Type	Age
South Fork Alsea Crossing	15S-6W-6	Mixed conifer/hardwood	50-80
Coleman Creek Crossing	14S-7W-36	DF plantation	20
Williams Creek Crossing	14S-7W-36	DF plantation DF stand	25 40

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species

This project area was surveyed on September 16th, 2002. Portions of these project areas are located outside of the road prism. There are no known sites of any vascular plant, lichen, bryophyte or fungi special status or special attention species within the proposed project areas (road prism) nor were any found.

Management of Survey and Manage Species found as a result of any additional inventories would be accomplished in accordance with the *S&M ROD* and the *S&M FSEIS*, and 2001 and 2002 annual species reviews, *BLM Information Bulletin No. OR-2002-033*. Any known sites would be withdrawn from any habitat altering activity or proposed mitigation would minimize any habitat disturbance.

Noxious weeds:

Several Oregon State listed noxious weed species are known from the project areas (Scot's broom, Canadian and bull thistles, St. John's wort and tansy ragwort). The majority of these known sites occur adjacent the existing roadways within the road prism.

Projects 3, 4 and 5 (Conifer Release)

Vegetation in the conifer release project areas is primarily mixed conifer/hardwood stands, logged 20 to 60 years ago. An apparent attempt was made to restock them with conifers after logging, but hardwoods now dominate in all project areas. Most of the hardwood component is red alder, but there are scattered big leaf maples. Diameters of the alder range from about four to over 20 inches, and their heights vary from approximately 40 to 60 feet. The alder are large enough (over four inches in diameter) that the timing of treatment would have little effect on re-sprouting.

Conifer species are Douglas-fir, western red cedar and western hemlock. Conifer diameters range from approximately 6 to 20 inches. Trees designated for release range from being overtopped to having approximately one-third of their crowns in full sunlight. The partially shaded conifers are experiencing growth loss, while the overtopped ones would not survive without release.

The understory in the project areas consists of some combination of vine maple, salmonberry, sword fern and/or riparian associated herbaceous species.

All proposed conifer release project areas occur within Riparian Reserves and most occur within 200 feet of streams ("stream influence zone", SIZ). (Table 7) The maps in Appendix B show specific project areas and adjacent streams.

Table 7: Acres by Project and Adjacent Streams

Project	Riparian Reserve Acres	SIZ Acres	Adjacent Streams
Alder Thinning	34	34	Bear Cr, East Fork Cr, Lobster Cr and their tributaries

Project	Riparian Reserve Acres	SIZ Acres	Adjacent Streams
Scattered Conifer Release	70	55	Lobster Cr, Bear Cr, East Fork Cr, South Fork Lobster Cr and their tributaries
Patch Cuts	7	4	Lobster Cr, South Fork Lobster Cr.

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species

This project area was surveyed on September 23rd, 2002 and April 9, 2003. In addition, many of these project areas are included in past watershed restoration project areas and have been surveyed in previous years. There are no known sites of any vascular plant, lichen, bryophyte or fungi special status or special attention species within the proposed project areas (road prism) nor were any found.

Management of Survey and Manage Species found as a result of additional inventories would be accomplished in accordance with the *S&M ROD* and the *S&M FSEIS* and 2001 and 2002 annual species reviews, *BLM Information Bulletin No. OR-2002-033*. Any known sites would be withdrawn from any habitat altering activity or proposed mitigation would minimize any habitat disturbance.

Noxious weeds:

Several noxious Oregon State listed noxious weed species are known from the project areas (Scot's broom, Canadian and bull thistles, St. John's wort and tansy ragwort. The majority of these known sites occur adjacent to the existing roadways within the road prism.

Vegetation: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

It may be necessary to remove scattered individual trees at some locations in order to remove culverts or cross drains, but effects to existing vegetation would be generally minimal. In cases where removal of sidecast embankment material is necessary, no trees or tree roots would be disturbed. Roads would be closed and stabilized using equipment and methods designed to minimize disturbance to existing vegetation.

Roads with residual vegetation already growing on the road surface would not be ripped, keeping as much vegetation on the road as possible to serve as a water and sediment barrier.

Over the long term, these projects would have no effect on species or stand structural diversity.

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species

There would not be any effect on any special status or special attention vascular plant, lichen, bryophyte or fungi species with this road decommissioning project since none occur within the project areas. However, decommissioning these roads may allow for future desired habitat for some of these species.

Noxious weeds:

Any ground disturbing activity may lead to an increase in the noxious weeds known from the project area. Known species from the area are priority III noxious weeds and are well established and widespread throughout the Mary's Peak Resource Area and the Salem District. Eradication is not practical using any proposed treatment methods. Grass seeding exposed soil areas tends to abate the establishment of noxious weeds. If the seed sown is not Oregon certified seed, or the species recommended, the seeding may increase the amount of non-native species in the project area and may lead to a greater infestation of noxious weeds than that anticipated. However, any adverse effects from noxious weeds are not anticipated. The risk rating for the long-term establishment of noxious weed species and effects of adverse effects on this project area is low.

Project 2 (Culvert Replacement with Temporary Road Bypass)

It may be necessary to remove a few trees during culvert replacement, and construction of the bypass routes would require removal of localized vegetation, including occasional trees. Where appropriate, conifers would be replanted in disturbed areas. In the long term these projects would have no effect on species or stand structural diversity

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species

There would not be any effect on any special status or special attention vascular plant, lichen, bryophyte or fungi species with these projects since none occur within the project areas.

Noxious weeds:

Any ground disturbing activity may lead to an increase in the noxious weeds known from the project area. Known species from the area are priority III noxious weeds and are well established and widespread throughout the Mary's Peak Resource Area and the Salem District. Eradication is not practical using any proposed treatment methods. Grass seeding exposed soil areas tends to abate the establishment of noxious weeds. If the seed sown is not Oregon certified seed, or the species recommended, the seeding may increase the amount of non-native species in the project area and may lead to a greater infestation of noxious weeds than that anticipated. However, any adverse effects from noxious weeds are not anticipated. The risk rating for the long-term establishment of noxious weed species and effects of adverse effects on this project area is low.

Projects 3, 4, and 5 (Conifer Release)

The canopy of hardwoods competing for light with existing conifers in the proposed project areas would be removed, which would allow for an increase in available sunlight to reach the shrubs and forbs in the understory and ground cover. The perennial understory species, including the target conifers, should increase in growth with the additional sunlight. In time the conifers should become dominant in the areas that are treated and over time become large enough to supply quality LWD to

the adjacent streams. Some of the cut alders would remain on site to decay and thus add additional short term LWD to the riparian areas.

Because all species but alder would remain within the project areas, and only a relatively small number of alders would be removed, these projects would have no negative effect on species or stand structural diversity.

Retreatment may be necessary in the future if alder crowns close in again before the treated trees attain dominance. Red alders larger than four inches in diameter normally do not resprout after cutting, but crowns of uncut alders tend to close at approximately 8% per year (Chan, 1996).

Opening up the canopy may cause such local ground level microclimatic changes as increased light levels, increased temperatures, lower humidity and increased wind speed. These effects would vary depending on aspect, slope and vegetation removed, but they would be of short duration and would be ameliorated as crowns close and vegetation again covers the ground.

Special Status and Special Attention Vascular Plant, Lichen, Bryophyte and Fungus Species
There would not be any effect on any special status or special attention vascular plant, lichen, bryophyte or fungi species with this watershed restoration project since none occur within the project areas. However, restoration efforts within these areas may allow for future desired habitat for some of these species.

Noxious weeds:

Any ground disturbing activity may lead to an increase in the noxious weeds known from the project area. Known species from the area are priority III noxious weeds and are well established and widespread throughout the Mary's Peak Resource Area and the Salem District. Eradication is not practical using any proposed treatment methods. Grass seeding exposed soil areas tends to abate the establishment of noxious weeds. If the seed sown is not Oregon certified seed, or the species recommended, the seeding may increase the amount of non-native species in the project area and may lead to a greater infestation of noxious weeds than that anticipated. However, any adverse effects from noxious weeds are not anticipated. The risk rating for the long-term establishment of noxious weed species and effects of adverse effects on this project area is low.

Alternative 2: Leave Felled Alders On Site in Projects 3, 4, and 5

Projects 1 (Road Decommissioning) and 2 (Culvert Replacement)

Environmental Effects would be identical to those for Alternative 1 for these proposed projects

Projects 3, 4 and 5 (Conifer Release, Leave Alders on Site)

Environmental Effects to vegetation would remain the same as for Alternative 1, except in the following ways:

- There would be no yarding roads and therefore no exposed mineral soil, making it less likely that noxious weeds would occur as a result of the proposed treatments.
- There would be no damage to understory or planted conifers due to yarding.

Alternative 3: Replace Culverts in Project 2; Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

Projects 1 (Road Decommissioning), 3, 4 and 5 (Conifer Release)

Environmental Effects would be identical to those for Alternative 1 for these proposed projects

Project 2 (Replace Culverts, Close the South Fork Alsea Access Road Instead of Constructing Temporary Bypass Roads)

Environmental Effects to vegetation would be identical to those for Alternative 1, except that no trees or local vegetation would be disturbed or removed to construct the temporary bypass roads. There may be less risk of noxious weeds occurring as a result of this alternative.

Alternative 4: No Action

Project 1 (Road Decommissioning)

No vegetation would be disturbed or removed. Vegetation conditions would remain in their current condition. Vegetation would continue to grow on roads with little traffic, until the road surface eventually becomes overgrown and impassable.

Project 2 (Culvert Replacement)

No vegetation would be disturbed or removed in the short term and vegetation conditions would remain in their current condition. It is possible that eventual culvert failure may result in loss of adjacent vegetation, including trees.

Project 3, 4 and 5 (Conifer Release)

Co-dominant conifers may survive and eventually overtop the competing alders, although their growth would be slowed by competition in the interim. Most conifers currently overtopped or substantially shaded by alder would most likely die. When those alders subsequently begin to die and the canopy opens up, salmonberry would likely dominate in the openings. Once salmonberry is established, succession to conifers would be unlikely until a severe disturbance occurs (Tappeiner, 1991). This would leave a wide strip of alder along streams in the proposed project areas where conifers formerly occurred. No additional short term down woody material would be added to the system.

D. Soils

Soils: Affected Environment

Project 1 (Road decommissioning)

The soils most prevalent adjacent to the Road decommissioning sites are Bohannon and Slickrock gravelly loams, and Preacher gravelly clay loam. The soils are well drained. In the road prisms themselves, the remaining soil has been stripped of top organic layers and had the subsoil compacted and covered with crushed rock 8 to 18 inches thick. These areas were removed from the timber productivity base at the time the roads were constructed.

Project 2 (Culvert Replacement with Temporary Bypass Roads)

The soils most prevalent adjacent to the culvert replacement sites are alluvial and colluvial silts, sands and gravels on stream flood plain and terrace areas. These soils are moderately well drained to wet, are frequently flooded and have permanent water tables within 2-4 feet below the surface. Soil at the culvert locations consists of compacted mineral soil, rock and gravel used in the road bed construction. These areas were removed from the timber productivity base at the time the roads were constructed.

Projects 3, 4, and 5 (Conifer Release)

The soils most prevalent in the Lobster Creek, East Fork Lobster and Wrecked Grader Road area riparian enhancement sites are alluvial and colluvial silts, sands and gravels in the stream flood plain and lower terraces; Bohannon and Bohannon-Slickrock gravelly loams and Klickitat gravelly clay loam on moderately sloping to nearly flat upland areas above the stream. The soils are well drained with the exception of a few areas of flood plain soils near the stream that have seasonal high water tables.

Bohannon and Bohannon-Slickrock soils on the sites are moderately deep, well drained, flat to gently sloping soils that developed from alluvial and colluvial materials derived from sandstone. The surface and subsurface soils are a dark brown gravelly loams and clay loams about 11 to 13 inches thick. Fractured sandstone with yellowish brown gravelly loam in the fractures is at a depth of about 24 inches. Sandstone bedrock is at a depth of about 40 to 50 inches.

Klickitat soils are moderately deep to deep, well-drained, flat to gently sloping soils that developed from alluvial and colluvial materials derived from basalt. The surface and subsurface soils are a dark reddish-brown very gravelly clay loam about 8 inches thick. Subsurface soils are a dark reddish-brown very gravelly clay loam about 21 inches thick underlain by a dark brown very gravelly loam about 18 inches thick. Fractured basalt is at a depth of about 47 inches.

Preacher soils are well drained soils formed in alluvial and colluvial materials derived from sandstone. The surface layer is a very dark brown and dark brown clay loam about 14 inches thick. Subsurface soils are a dark yellowish-brown very clay loam about 28 inches thick composed of approximately 10% pebbles. Below this layer is a yellowish-brown sandy loam about 18 inches thick. Weathered sandstone is at a depth of about 60 inches.

Soils: Environmental Effects

Alternative 1: Proposed Action

All Projects:

The major management concern with the loam and clay loam soils is the sensitivity to compaction when the soils are moist and subjected to pressure from heavy equipment. When compacted there may be a reduction in site productivity and infiltration rate. Reduction of infiltration rate can result in overland flow causing surface erosion.

There is lower compaction risk when operating on the coarser textured colluvial and alluvial soils. As one moves up and away from the stream flood plain area, into the upper terraces and upland, the clay fraction increases, as does the tendency for compaction of these soils.

The risk for slope failure or excessive surface erosion on or adjacent to these sites is low.

Project 1 (Road Decommissioning)

Over the past five years the overall trend in road density for the watershed on federal lands has been decreasing. This proposed action would continue that trend. There are no long term negative effects expected to occur to soil resources resulting from road decommissioning projects planned under this proposed action. In the short term there would be a potential for some increased surface soil erosion originating from exposed soil where culverts are removed and drain dips constructed. However if recommended design features are employed it is doubtful that measurable degradation of water quality would be observed or that above normal rates of soil erosion would occur. This alternative has the potential to return approximately 10.5 acres of land, currently designated as non-forest road to a moderately productive forest condition.

Project 2 (Culvert Replacement with Temporary Bypass Roads)

Soils in the areas where culverts would be replaced are included within the road prism and not considered part of the forest productivity base. No impacts would be considered for these soils. The soils adjacent to the culverts to be replaced would be affected by the construction of the temporary road and water diversion system. Top soil would be removed or displaced and the subsoil would be compacted and covered with crushed rock. When the temporary roads are removed some of the compaction would be mitigated by sub-soiling (ripping) with the hydraulic shovel. Some top soil and organic material would be replaced on the surface to improve the productivity and resistance to erosion. Full recovery of soil structure, through natural processes, would take several decades. In the mean time, risk of surface soil erosion would be mitigated rapidly once the soil is partially restored by ripping and replacement of some organic material. Vegetation should re-establish rapidly on these moist sites. The combined affected area for the three sites is expected to be less than ½ acre of riparian habitat.

Projects 3, 4, and 5 (Conifer Release)

Past projects involving yarding of alders to roads by winching has resulted in no negative effects to the soils. Effects from this project should be no different. The heavy brush and slash would protect the soil surface during yarding of the moderate to small size logs, therefore no significant damage

would occur to the soil surface. Since all equipment would stay on the existing roads, no significant compaction is expected to occur off road. There may be some small landing points along the roads that would extend a few feet beyond the ditch line. Where landings are located, it is expected that some moderate soil compaction and surface soil displacement would occur in very small areas less than 300 ft² in the ditch line area. No measurable effects to long-term productivity are expected. No measurable soil erosion is expected. Logging production rates for this type of treatment are low. Expected log hauling rate would be 1-3 truck loads per day. Very little sediment production from road traffic is expected.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Project 1 (Road Decommissioning) and Project 2 (Culvert Replacement)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for Alternative 1.

Projects 3, 4, and 5 (Conifer Release)

Since no logs would be removed, there would be no effects to soils or stream turbidity from yarding or hauling of logs.

Alternative 3: Replace Culverts in Project 2, Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

Project 1 (Road Decommissioning), Projects 3, 4, and 5 (Conifer Release)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for Alternative 1.

Project 2 (Culvert Replacement)

Under this alternative, bypass roads would not be constructed around the culvert sites, thereby limiting the aerial extent of ground disturbance to the existing road right-of-ways and the area in and near the streams where the stream by-passes would be constructed. The approximate ½ acre of riparian habitat that would be converted to a temporary road would remain riparian habitat.

Alternative 4: No Action

This alternative would result in no change to the affected environment of any project. Potential return of approximately 10.5 acres of land designated as non-forest road to moderately productive forest land as a result of road decommissioning would not be achieved in this alternative.

E. Fuels

Fuels: Affected Environment

All Projects

The fuels presently in the proposed project areas are typical for a 40 to 50 year old, mid-coast range, Red alder and mixed Red alder / conifer stands. There are a few old down logs resulting from windthrow or past logging. Most of the larger fuels are in advanced stages of decay. Under growth is heavy salmonberry and associated brush species. Fuel model is a model 8 - timber litter. The estimated total average dead fuel loading existing on these sites range from 10 to 25 tons per acre, most of this being in the 1000 hours or larger class (over 9" in diameter).

Fuels: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

The effects of closing roads on fire and fuels vary with the roads being closed. Most of the fire starts in this area are the result of human related activities and are mostly associated with road access. Closing dead end spur roads should result in a lower potential for fire starts in the areas previously made accessible by the road. If a fire does start in one of these areas however, the reduced accessibility would result in a larger fire and more resource damage. In the case of road 15-8-35 the potential for fire starts would still remain along the open portions of the road system. With the central portion of the road closed however, access routes to water sources in Lobster creek would be greatly lengthened or cut off. This could result in delayed fire suppression, larger fire size and increased resource damage.

Project 2 (Culvert Replacement with Temporary Bypass Roads)

Effects on fire and fuels from culvert replacement activity are expected to be fully mitigated by the recommended design features. Fuels resulting from the proposed action would be scattered or removed.

Projects 3, 4, and 5 (Conifer Release)

Effects on fuels would be an increase in the loading of hardwood slash on the sites. The fuel model would change from model 8 to a combination of model 10 and 11. The predominance of hardwood slash, partial shading, lower air temperatures and higher humidity associated with riparian areas would result in low to moderate fire intensity and risk. There would be some very minor short-term negative effects to air quality in the nearby vicinity of the piles if they are burned.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Projects 1 (Road Decommissioning) and 2 (Culvert Replacement)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for Alternative 1.

Projects 3, 4, and 5 (Conifer Release)

The effects on fire and fuels from this alternative are similar to the effects described for the proposed action. However, under this alternative, the retention of all felled hardwoods on site would boost the amount of large fuel considerably. Under extreme fire conditions this large material would result in a higher resistance to control the fire while the risk of a fire starting would be only slightly higher than under Alternative1.

Alternative 3: Replace Culverts in Project 2, Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

Projects 1 (Road Decommissioning), 3, 4, and 5 (Conifer Release)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for Alternative1.

Project 2 (Culvert Replacement)

Much less fuel would be created from this alternative and therefore there would be less need for fuels disposal.

Alternative 4: No Action

This alternative would result in no change to the affected environment of any project. Current fuel conditions would be maintained.

F. Water

Water: Affected Environment

Project Area Hydrology

The project area lies within the Lobster Creek (HUC# 1710020502) and the Upper Alsea River (HUC# 1710020501) 5th-field watersheds. Proposed projects by sub-watershed (6th-fields) are shown in Table 1. The project area is covered in the *Lobster-Five Rivers Watershed analysis* (1997) and the *South Fork Alsea Watershed Analysis* (1995). Upper Lobster Creek is a key watershed.

Table 8: Proposed Projects by Watersheds.

5 th -field watershed	6 th -field sub-watershed	Project
Five Rivers/Lobster Creek	Lower Lobster Creek	Road decommission
	Upper Lobster Creek	Road decommission Scattered conifer release Alder thinning Patch cuts
Upper Alsea River	Upper South Fork Alsea River	Culvert replacement Road bypass

Streams in the Lobster Creek watershed have been highly disturbed from relatively high road densities and extensive timber harvest during the past several decades. This has contributed to increasing levels of fine sediments in the stream system, but a deficiency in larger cobbles and gravels. A critical element in the watershed is a decline in LWD, which can impair sediment routing and groundwater recharge, decrease channel complexity, and increase stream velocities.

Project Area Climate

Project sites in the Five Rivers/Lobster Creek watershed receive approximately 80-90 inches of rain annually, while project sites in the Upper Alsea watershed receive approximately 60-70 inches annually. Both areas have a mean 2-year precipitation event of approximately 5 inches in a 24-hour period (N.O.A.A. Precipitation-Frequency Atlas for Oregon, Volume X). At a distance of over 18 miles from the ocean, fog and fog drip are not significant contributors to watershed hydrology (Soil Service).

Elevations in the watersheds range from approximately 100 to 4080 feet. While snow pack accumulation in the Oregon Coast Range is unusual, elevations between 1500'-3000' lie within a transient snow zone. In most years, at elevations above 1500 feet, snow remains for short periods and may be subject to rain on snow events (ROS) (USDI 1995). Overlapping areas between high intensity rainfall and high ROS events are particularly vulnerable to extreme storm events and may lead to flooding (USDI 1996). Most, if not all, of the proposed projects lay outside the ROS zone at lower elevations, either within or immediately adjacent to stream valleys.

Project Area Water Quality

Fine sediment and turbidity

Occasional turbidity grab samples were collected 1995-1999 during winter storm events in the project area sub-watersheds. The median values for the sub-watersheds are all below the 30 NTU standard Oregon DEQ set for the Umatilla sub-basin Total Maximum Daily Load (TMDL) assessment (ODEQ 1999). Some of the streams sampled exceeded the 30 NTU TMDL during storm events. Most, if not all of these extreme values may have occurred during the 1996 flood, however turbidity values for these watersheds are believed to be high compared to

background/reference conditions. A detailed report of the sampling results can be found in the project NEPA file, Hydrology Report.

Stream Temperature

Stream temperature has been monitored at several sites in the Upper Lobster Creek and the Upper South Fork Alsea sub-watersheds. The results of monitoring during the summer (generally June-September) at sites closest to the proposed projects are summarized in Table 3. The State of Oregon's Department of Environmental Quality's standard for stream temperature is 17.8° C. A stream is listed as exceeding the state's standard if a maximum daily temperature recorded at the site exceeded the standard for at least one day during the sampling period.

Table 9: Stream Temperature Monitoring in the Project Area.

T-R-Section	Stream (sampling location)	Year	DEQ Standard Exceeded?	Proposed Project
15-8-35	Lobster Cr. (Above confluence w/ S. Fork Lobster)	1999	No	Scattered conifer release, patch cuts
		2000	No	
15-8-35	Lobster Cr. (Below confluence w/ S. Fork Lobster)	1996	Yes	Road decommissioning, Patch cuts
		2000	Yes	
15-8-35	South Fork Lobster (@ confluence w/ Lobster Cr.)	1996	Yes	Road decommissioning, scattered conifer release, patch cuts
		1997	No	
15-8-15	Lobster Creek (@ Confluence w/ Bear Creek)	1996	Yes	Scattered conifer release
		1998	Yes	
15-8-15	Bear Creek (@ Confluence with Lobster Cr.)	1996	No	Scattered conifer release
14-7-36	Williams Creek (@ Confluence with South Fork Alsea)	2000	Yes	Culvert replacement
14-7-36	Upper S. Fork Alsea (Below confluence with Jones Cr.)	1998	Yes	Culvert replacement

The majority of streams in the project area have exceeded the state's temperature standard for maximum summer temperatures. Among the factors contributing to increases in stream temperature are: lack of adequate streamside shading and a lack of deeper pools in the system (associated with LWD jams).

Other Water Quality Parameters

Macroinvertebrate sampling can be used as an indicator of "stream health" as particular species of macroinvertebrates are able to tolerate varying water quality conditions. Between 1995 and 2000,

macroinvertebrate sampling was conducted for 29 sites on Lobster Creek and its tributaries and on the South Fork Alsea and tributaries. The data was analyzed utilizing the Level 3 Assessment methods suggested by the Oregon Department of Environmental Quality (DEQ) (*Water Quality Monitoring Guidebook*, Version 1.03, Chapter 12). Using the DEQ's suggested interpretation of the Level 3 assessment scores, seven sites in Lobster Creek were found to be "severely impaired", 7 sites were "moderately impaired", and 15 sites were "slightly impaired" (BLM 2000). Sites on the South Fork Alsea were found to be "slightly impaired."

All of the severely impaired sites were collected prior to 1995 in the Lobster Creek drainage and the exact protocols followed during sampling are unknown. However, most of the sites in the Lobster Creek drainage can be viewed as at least moderately impacted; that is, the samples show a trend in invertebrate populations that indicate stressful conditions in the aquatic system. Stressful conditions may include elevated suspended sediment and turbidity levels, increases in stream temperature and/or lack of suitable substrate materials.

Additional water quality parameters (e.g. nutrients, dissolved oxygen, pesticide and herbicide residues, etc.) are unlikely to be affected by this proposal and were not reviewed for this analysis (US EPA 1991).

Oregon Department of Environmental Quality (DEQ)

The Oregon Department of Environmental Quality's (DEQ) 1998 303d List of Water Quality Limited Streams (<http://waterquality.deq.state.or/wq/303dlist/303dpage.htm>) is a compilation of streams which do not meet the state's water quality standards. A review of the listed streams for the Lower Lobster Creek, Upper Lobster Creek, and Upper South Fork Alsea sub-watersheds was completed for this report. South Fork Lobster Creek and Lobster Creek are listed for summer temperature from their mouths to headwaters. The South Fork Alsea and project area tributaries are unlisted.

The DEQ published an assessment, the 319 Report, which identifies streams with potential non-point water pollution problems (*1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution*). Both Lobster Creek and the South Fork Alsea River were identified as having moderate water quality problems affecting general water quality and fish and aquatic habitat. However, no description of the problem or data in support was located in the report. Other sources of information (watershed analysis, ODFW habitat surveys) give more up to date information, supported by data, on fish and aquatic habitat conditions for these streams (see section G., Fisheries).

Project Area Beneficial Uses

Beneficial uses of surface water from the project area are displayed in Table 4. There are no known municipal or domestic water users in the Lobster Creek basin in the vicinity of the project area. There are no water rights listed for East Fork Lobster Creek, South Fork Lobster Creek, Bear Creek, or their tributaries. There is one surface water right on Lobster Creek near the proposed scattered conifer release in section 15-8-15.

There are no water rights listed for Coleman Creek, Williams Creek, or the South Fork Alsea where culvert replacements are proposed. Instream water rights for the South Fork Alsea initiate approximately 2 miles downstream from the project area, near Alsea Falls campground. The town of Alsea is approximately 9 miles downstream. Additional recognized beneficial uses of the stream-flow in the project area include anadromous fish, resident fish, recreation, and esthetic value. BMPs would be implemented to eliminate or minimize any potential affects to beneficial uses in the watersheds.

Table 10 Beneficial Uses Associated with Streams in the Project Area.

Streams (Sub-watershed-6th field)	Proposed Activity	Beneficial Use of Water	Approximate Distance from Project	Information Source
Wilkinson Creek (Lower Lobster Creek)	Project 1 Road decommissioning	Anadromous fish	onsite	BLM, MPK fish biologist
		Resident fish	onsite	BLM, MPK fish biologist
		Domestic use	1.5 miles	WRIS ¹
		Irrigation/live stock watering	1.5 miles	WRIS ¹
Lobster Creek, South Fork Lobster, East Fork Lobster, & Bear Creek (Upper Lobster Creek)	Project 1 Road decommissioning Project 4 Alder thinning) Project 5 scattered conifer release Project 6 Patch cuts	Anadromous fish	onsite	BLM, MPK fish biologist
		Resident fish	onsite	BLM, MPK fish biologist
		Domestic use	< 1 mile	WRIS ¹
		Irrigation/live stock watering	< 1 mile	WRIS ¹
Williams Creek, Coleman Creek, & South Fork Alsea (Upper South	Project 2 Culvert replacement, constructing a temporary bypass	Anadromous fish	≈ 0.25 miles	BLM, MPK fish biologist
		Resident fish	onsite	BLM, MPK fish biologist
		Domestic use	> 10 miles	WRIS ¹

Streams (Sub-watershed-6th field)	Proposed Activity	Beneficial Use of Water	Approximate Distance from Project	Information Source
Fork Alsea)	Project 3 Culvert lining	Irrigation/live stock watering	8 miles	WRIS ¹

1. WRIS = *Water Rights Information System* on the Oregon Department of Water Resources website.

2. MPK = Marys Peak

Water: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

Activities associated with road decommissioning and removal/reduction of the trash rack may cause short-term disturbance to water quality and channel function. During culvert removal, stream bed restoration work, and removal of the trash rack, increases in stream sedimentation and resulting turbidity can be expected as equipment is operating in the stream channel. However, such increases are likely to be of local extent and short duration. Construction would occur under minimal flow conditions and sediment increases are not expected to significantly exceed current levels (i.e. are unlikely to be measurable upon project completion). Replacing/installing drain dips, ripping, blocking, and felling alders into the roadbed are not likely to significantly alter water quality or channel function. BMPs (see Project Design Features) would be implemented to minimize any potential sedimentation into stream channels from these activities.

In the long term, road decommissioning is likely to help restore channel function and improve water quality. Culvert removal and drain dip installation would help restore natural flow paths. Ripping, stabilizing, and felling alders into the roadbed are likely to reduce runoff channeling, thereby reducing the potential for soil erosion and sedimentation into streams. Removal of the trash rack would also help restore the natural transport of woody debris in the Lobster Creek stream system.

Project 2 (Culvert Replacement With Temporary Bypass Roads)

This project would entail replacing existing culverts on three major crossing of the South Fork Alsea Access Road. The project is likely to cause some short-term direct disturbance to water quality and channel function.

Culvert replacement necessitates operating machinery in the stream channel, which can compact stream bed substrates, alter bed form and increase sedimentation in the stream system. However, any disturbance is likely to be short term and the following design features would be implemented to minimize potential effects to the hydrologic system. Construction activities would occur during low flow conditions and removal of riparian vegetation would be minimized, though the removal of occasional trees may be necessary. To minimize sedimentation downstream of the project sites, stream water would be pumped and/or piped through construction areas. The road embankment

adjacent to the culvert would be armored with riprap as scour protection and disturbed surfaces would be grass seeded and planted with conifer tree species where necessary. Temporary bypasses would be removed upon project completion and the original ground contoured.

In the long term, the replaced culverts are expected to perform better than the existing worn culverts and improve hydrologic function. Because the new culvert widths would be sized at full bank flows, they are not expected to greatly impede channel function (channel shape and streamflow migration).

Potential effects that may occur from the temporary bypass construction include, short term increases in sedimentation, alteration of the natural flow path for an extended period of time, and the removal of additional streamside vegetation (which may reduce bank stability).

Project 3, 4, and 5 (Conifer Release)

The proposed projects would reestablish and further encourage conifers in the riparian reserve in Upper Lobster Creek sub-watershed by thinning alders, cutting hardwoods to release existing conifers, and creating patch openings in which to plant conifers.

Sedimentation and Turbidity

It is unlikely that the proposed projects would lead to measurable increases in sediment delivery to streams, stream turbidity, the alteration of stream substrate composition, or sediment transport regime. Stream buffers would eliminate disturbance of streamside vegetation; no trees would be cut from the stream bank or where roots are stabilizing the stream bank. Therefore it is unlikely that these actions will increase bank erosion or channel cutting by altering channel roughness, redirecting flows or altering bank-stabilizing vegetation.

Yarding corridors, if sufficiently compacted, may route surface water and sediment into streams. However, several factors could limit the potential for this to occur. The small number of trees being yarded would limit surface disturbance to minimal levels and stream buffers would act to filter any potential sediment from yarding activities. Even if compacted, high levels of residual slash left on yarding corridors, would reduce runoff by deflecting and redistributing overland flow laterally to areas where it would infiltrate into the soil. Limbs, tops, and brush would be scattered on the project site and yarding corridors would be grass seeded where necessary to prevent erosion and aid infiltration. Yarding equipment would be restricted to existing roads to reduce soil compaction and yarding and hauling would be restricted to periods of low precipitation and soil moisture. Tree removal is not proposed on steep, unstable slopes where the potential for mass wasting adjacent to streams is high. Therefore, yarding and the mechanical removal of trees are unlikely to significantly impact project area hydrology.

Felling some alders into the streams may immediately increase sedimentation and flow turbidity. Over the long term, the action would likely slow stream velocities, increase the retention of channel substrates, and add channel complexity.

Site preparation and conifer planting are not likely to result in measurable direct or indirect effects to water quality, hydrological function or stream channel condition. Some local erosion may result from scalping circles around planting spots and during tree planting in Project 5. However, the amount of sediment transport would be minimal and unlikely to reach streams. Areas around planting circles would remain vegetated and covered by brush, which would trap any loosened soil. In addition, site preparation and conifer planting would occur away from streams (outside of stream buffers).

Stream Temperature and Water Quality

With the exception of the patch cuts, riparian forest density in the project area would be left virtually unaltered under this proposal. The small number of trees being removed in the patch cuts is unlikely to have any measurable effect on stream temperatures, as small openings in the canopy are a natural component of forest ecology (as various local disturbances affect riparian forests). No-cut buffers would ensure that shading immediately adjacent to streams would remain unaltered and buffers would be extended to further protect portions of stream channels where forest shade helps maintain the current stream temperature regime.

Since the proposed actions are not unlikely to result in any measurable increase in stream temperature, sedimentation, nor would it place large amounts of fine organics in the stream channels, other water quality parameters (DO, pH, conductivity) are unlikely to be affected by these projects. No fueling of chainsaws would be done within 200 feet of streams unless it is done on the road.

Channel Stability and Function

In the short term, these projects are unlikely to significantly alter the current condition of channels in the project area. Disturbance to channel function is likely to be low, since the only activity that would occur directly in stream channels is alder felling into streams. Dropping alders into streams in Lobster Creek would add much-needed (albeit less robust) large woody debris to the channels. In Upper Lobster Creek sub-watershed, LWD structure in the channel is particularly important because it has been depleted to levels below its natural range (USDI 1997). LWD would ultimately reduce stream velocities, stabilize stream banks, increase retention of organic material, capture bedload, improve aquatic habitat, and help restore channel function.

Over the long term, thinning and increasing species diversity (enhancing/planting conifers) in the riparian reserve would likely increase riparian health and tree size. This could lead to increased large wood recruitment for stream channels (with the resulting benefits listed above).

Cumulative Effects

The proposed action (projects 1-5), when combined with other proposed actions in the Upper Alsea and Five Rivers/Lobster Creek watersheds, is unlikely to have detrimental cumulative effects on the hydrologic regime. Vegetative cover expected to be removed in these proposed projects would be less than 2% of the watershed vegetation. The proposed projects are likely to have short-term local effects to channel function and sedimentation, which are not expected to further degrade hydrologic conditions.

In almost all cases, removal of more than 20% of the vegetative cover over an entire watershed would result in increases in mean annual water yield. Removal of less than 20% of vegetative cover has resulted in negligible changes where it was not possible to detect any effect (i.e. the error in measurements was greater than the change) (Bosch 1982). Typically increases in stream flow occur during periods of low soil moisture and are attributed to reductions in evapotranspiration by nearby vegetation.

In addition, alterations in the timing and/or quantity of peak flow events as a result of forest harvest and road construction have been studied for several decades. Jones and Grant (1996) hypothesized that clear-cutting leads to increases in stormflow volume while road construction and wood removal from channels results in earlier, higher peak flows. Alterations in peak flow timing and quantity are of particular concern in watersheds with potential for snow accumulation and quick melt-off during rain-on-snow events (ROS).

Projects proposed in the Five Rivers / Lobster Creek 5th-field watershed (road decommissioning, scattered conifer release, alder thinning, and the creation of patch cuts) would affect less than 0.1% of forest cover in the watershed. Furthermore projects 3, 4, & 5 would only affect 0.7% of the Upper Lobster Creek 6th-field forest cover. Projects proposed in the Upper Alsea River 5th-field watershed (culvert replacement and temporary road bypass) would entail removing as few trees as necessary to complete the project. Therefore, direct affects from this project on cumulative effects to streamflow are too small to be measured with reasonable accuracy.

Summary

Measurable effects to watershed hydrology, channel morphology, and water quality as a result of the proposed action are unlikely. In the short term, this action may alter the current condition of the aquatic system either by affecting its physical integrity, water quality, sediment regime, or in-stream flows. Alterations in the capture, infiltration and routing (both surface and subsurface) of precipitation may occur as a consequence of the mechanical removal of trees and reductions in stand density. This effect would be difficult to measure and unlikely to substantially alter stream flow or water quality. Any changes in the capture and routing of precipitation would likely return to pre-treatment conditions as the remaining forest fills out.

This proposal is unlikely to substantially alter stream flow or peak flow events. Tree removal and road decommissioning would not occur on steep, unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action. In addition, potential effects resulting from tree harvest and road decommission would be mitigated to reduce the potential for measurable sediment delivery to streams, by implementing Best Management Practices (BMPs). Although thinned, substantial portions of the riparian canopy would be retained, therefore maintaining long-term riparian microclimate conditions and protecting streams from increases in temperature.

In conclusion, this proposal is unlikely to impede and/or prevent attainment of the stream flow and basin hydrology, channel function, or water quality objectives of the Aquatic Conservation Strategy (ACS). Over the long term, this proposal should aid in meeting ACS objectives by speeding the development of older forest characteristics in the riparian zone, which in turn increases streamside shading and the potential for large woody debris contributions into stream channels.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Under this alternative, the direct, indirect and cumulative effects to water quality, hydrological function and stream channel conditions would be similar to those for the proposed alternative except that any potential disturbance to streams from yarding alders would be eliminated. Cut trees would be left in place, thereby eliminating any soil compaction and/or potential sedimentation from yarding corridors.

Alternative 3: Replace Culverts in Project 2; Close the South Fork Alsea Access Road Instead of Constructing Temporary Bypass Roads

Under this alternative no temporary bypasses would be established in connection with culvert replacements in the South Fork Alsea sub-watershed and any potential effects to the hydrologic regime from constructing and utilizing the temporary bypasses would be eliminated.

Alternative 4: No Action

Under the No Action alternative the existing water quality conditions, stream flows, and channel conditions at the project sites would continue their current trends as described in the *Lobster-Five Rivers Watershed Analysis* and the *South Fork Alsea Watershed Analysis*. Worn culverts along the South Fork Alsea River would continue to deteriorate, increasing the potential for erosion and sedimentation and eventual failure. Un-decommissioned roads would continue to further intercept natural flow paths and contribute sediment from vehicular use (wear and tear). The Lobster Creek stream system would recover conifers in the riparian reserve and LWD in the stream channels at a much slower rate than under the proposed action.

G. Fisheries

Fisheries: Affected Environment

The proposed action would take place within the 5 Rivers Lobster Basin and the South Fork Alsea Basin. Both of these basins support populations of Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), Steelhead trout (*Oncorhynchus mykiss*), resident cutthroat trout (*Oncorhynchus clarkia*) and sculpin (*Cottus sp.*). Projects in the South Fork Alsea would take place above Alsea Falls, which is a natural barrier to fish, therefore only resident cutthroat trout, and sculpin are within the proposed project areas. In 5 Rivers Lobster Valley all fish listed above are within the proposed project areas.

Proposed projects within the South Fork Alsea would be culvert replacements with temporary road bypasses.

These projects are located in fairly low grade meandering streams with low amounts of LWD. The South Fork Alsea has a high sediment load due to the soft meadow that the streams flow through.

Other tributaries are dominated by gravels and smaller materials. Stream crossings have small steps or rusted culvert barrels making fish passage difficult or impossible.

Projects within the Five Rivers/Lobster Valley Basin would release conifers within the Riparian Reserve and decommission roads. The conifer release project areas are along the main stem Lobster Creek, South Fork Lobster Creek, East Fork Lobster Creek and some other smaller tributaries. Habitat conditions within these reaches contain low gradient riffles and pools dominated by gravels and cobbles. In general the level of LWD is low to moderate, but a very large log jam exists on South Fork Lobster Creek and an instream LWD restoration project was done in East Fork Lobster Creek. These jams continue to function, sorting gravels, providing cover, and creating complex and diverse habitat types.

Listed Fish Species

Coastal Coho Salmon (*Oncorhynchus kisutch*) are listed as threatened under the Endangered Species Act. Coho Salmon are down stream from the proposed project areas at Alsea Falls in the South Fork Alsea (approximately 1/4 mile to the closest proposed culvert project), and are within the proposed project areas in Lobster Valley.

Projects 1 and 2 would be covered under the *Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of Land Management Programmatic Activities in Northwestern Oregon* (February 25, 2003) for listed fish. Projects 3, 4, and 5 would be consulted on individually in accordance with current BLM policy.

Fisheries: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

Road decommissioning would cause some short-term increases in turbidity and sediment delivery to local and adjacent streams. This increase would be short term and would most likely occur during heavy rain events when streams are full. Design features would minimize these effects. Direct effects on fish would be minor due to the short duration of the projects. Habitat conditions are expected to be maintained and any increase in sediment delivery from this project would be short term and would not impact the existing sediment regime.

Long-term effects would be improvement of the existing water quality, riparian and aquatic habitat conditions. Road run off would not occur, which would allow precipitation to percolate through the ground. Water would enter streams more slowly and with less turbidity. Stream crossings (culverts) would be returned to natural hydrological function. Riparian forests would develop where current roads now are. This would increase future LWD potential.

Project 2 (Culvert Replacement with Temporary Bypass Roads)

Culvert replacement would inevitably have a small short-term increase in turbidity. This increase would be short term as the culvert and channel adjust to new conditions and vegetation grows in disturbed areas. Some channel head cutting is expected in culverts with steps. This would occur

within the first year and would adjust to the new level of the culvert. Effects to fish would be minor due to existing tributaries and the small amount of increased turbidity that is expected. Design features are expected to minimize the effects and amount of disturbance associated with culvert replacement. Fish passage would be restored to those culverts currently blocking fish passage. Streams are now forced into too-narrow culverts, causing scouring of outlets and increasing bank erosion and turbidity. New culvert crossings would be closer to a natural stream bed by having culverts as wide as the bank full width and embedded into the channel (see design features).

Potential effects that may occur from the bypasses include short term increase in sedimentation, alteration of the natural flow path for an extended period of time, and the removal of additional streamside vegetation (which may reduce bank stability).

Projects 3, 4, and 5 (Conifer Release)

These projects would not increase turbidity or stream temperature. Stream side shade would not be affected, due to alder retention in buffers where necessary, local aspects, topographic relief, and other design features. Only a small number of alder logs would be yarded over slash and debris, therefore yarding would not create large disturbances within the Riparian Reserve. Alders felled into stream channels may increase short-term turbidity from bank scouring and channel adjustments to the addition of structure, but they would provide cover and habitat complexity for fish.

Long-term benefits of this project include: improving riparian complexity and function and increasing future LWD potential. As trees in the riparian area mature and become recruited into stream channels, aquatic habitat would benefit from habitat complexity and cover.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Projects 1 (Road Decommissioning) and 2 (Culvert Replacement)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for the proposed alternative.

Projects 3, 4, and 5 (Conifer Release)

Under this alternative, effects to water quality and fish habitat would be similar to those for the proposed alternative except that any potential disturbance to streams from yarding alders would be eliminated. Cut trees would be left in place, thereby eliminating any soil compaction and/or potential sedimentation from yarding corridors.

Alternative 3: Replace Culverts in Project 2, Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

Projects 1 (Road Decommissioning) 3, 4, and 5 (Conifer Release)

There is no change in the project design for these projects under this alternative. Therefore, the effects are the same as described for the proposed alternative.

Project 2 (Culvert Replacement)

Under this alternative no temporary bypasses would be constructed and any potential effects to water quality or fish habitat from constructing and utilizing the temporary bypasses would be eliminated.

H. Wildlife

Wildlife: Affected Environment.

Project 1 (Road Decommissioning)

The road segments selected for decommissioning all lie within critical habitat that has been designated for the northern spotted owl (CHU: OR-48) and marbled murrelet (CHU: OR-04-j). All work to accomplish the road decommissioning would occur within the existing road prism and would not involve the alteration of any wildlife habitats of concern. No surveys are required for any Special Status Species or Special Attention Species (including Survey and Manage Species), since habitat for these species would not be altered. Suitable habitat for northern spotted owls and marbled murrelets lies adjacent to many of the road segments. To the extent that these federally listed wildlife species may be occupying forest stands adjacent to project sites, they may be vulnerable to noise disturbance generated by project activities. No other federally listed wildlife species is likely to be affected by this project.

Project 2 (Culvert Replacement)

The three culvert replacement sites along the South Fork Alsea Access Road all lie within critical habitat that has been designated for the northern spotted owl (CHU: OR-48). However, no constituent elements of critical habitat would be altered by this project. Also, there is no suitable habitat that would be altered by this project, yet a small patch of suitable habitat for northern spotted owls and marbled murrelets lies adjacent to one of the culvert sites. To the extent that these federally listed wildlife species may be occupying the suitable patch adjacent to this site, they may be vulnerable to noise disturbance generated by project activities. No other federally listed wildlife species is likely to be affected by this project. No surveys are required for any Special Status Species or Special Attention Species (including Survey and Manage Species), since habitat for these species would not be altered.

Project 3 (Conifer Release – Alder Thinning)

All of the alder thinning units lie within critical habitat that has been designated for the northern spotted owl (CHU: OR-48) and for the marbled murrelets (OR-04-j), yet no constituent elements of critical habitat would be affected by this project. Also, no suitable habitat for spotted owls or marbled murrelets would be altered by this project. Small patches of suitable habitat lie adjacent to two of the three thinning units, and the unit in Section 16 lies adjacent to an occupied marbled murrelet site. To the extent that spotted owls or marbled murrelets may be occupying the suitable

habitat adjacent these units, they may be vulnerable to noise disturbance generated by project activities. No other federally listed wildlife species is likely to be affected by this project. No surveys were required for any Special Status Species. There are no known sites of Survey and Manage (S&M) wildlife species (red tree voles, mollusk species) within the proposed treatment units. No surveys were required for red tree voles since the proposed project would only affect hardwood stands that are not considered suitable habitat for this species. Surveys for S&M mollusk species were conducted within all proposed conifer release sites. One mollusk site was found (Oregon megomphix) and a protection buffer was established around that site to exclude any treatment (see Appendix B, Maps). None of the special habitats identified within the *Lobster/Five Rivers Watershed Analysis* (e.g., old-growth patches, wetland habitats including beaver ponds) would be affected by this action.

Project 4 (Conifer Release – Release Scattered Conifers)

The affected environment for this project is nearly identical to Project 3. Two active spotted owl sites lie within 0.5 miles of the proposed units.

Project 5 (Conifer Release – Patch Cuts)

The affected environment for this project is nearly identical to Project 3. Very little unsurveyed suitable habitat (less than 20 acres) for spotted owls and marbled murrelets lies adjacent to these small units.

Wildlife: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

Direct and Indirect Effects.

Due to the close proximity of unsurveyed suitable habitat (less than 0.25 miles), this project would be considered a **may affect, likely adverse affect** to spotted owls and marbled murrelets if implemented during the critical part of the breeding period (March 1 to August 5). If implemented during the period August 6 to September 30, project activities would be considered a **may affect, not likely adverse affect**. Formal consultation with the Fish and Wildlife Service has addressed these potential impacts to federally listed wildlife species. A Biological Opinion (BO) received from the Service on April 4, 2002 (reference # 1-7-02-F-422) concluded that these types of projects would not likely result in jeopardy to any listed species. All applicable Terms and Conditions required by the BO have been incorporated into the design features of the proposed action. There are no significant effects anticipated to occur to any other Special Status Species or Special Attention Species (including Survey and Manage Species) because work conducted within the road prism would not appreciably alter the quality or quantity of the adjacent terrestrial habitats that may be used by such species. Those road segments proposed for decommissioning should benefit most wildlife species in the project area as future access (and associated human disturbance) is reduced.

Cumulative Effects.

The *Lobster/Five Rivers Watershed Analysis* reported that most of the sub-watersheds had road densities above 4 miles per square mile. Over the past five years several miles of forest roads have been decommissioned or blocked on federal lands within this watershed, while private timberlands have reopened or created several new roads for harvest operations. The overall trend in open road density for the watershed is not known, but it is clear that on federal lands open road density has been decreasing. There are no negative effects expected to occur to any wildlife species or wildlife habitats as a result of decreasing road densities from the proposed action. It is likely that the condition and population trends of some wildlife species would improve as a result of reduced human disturbance along roads.

Project 2 (Culvert Replacement)

Direct and Indirect Effects

The culvert replacement sites lie along a well-traveled scenic byway with very little unsurveyed suitable habitat adjacent. Since this area has a relatively high ambient noise level, the potential for noise disturbance to spotted owls and marbled murrelets is unlikely. Therefore, this project is considered to be “**no effect**” to these listed species. Also, no significant effects are anticipated to occur to any other Special Status Species or Special Attention Species (including Survey and Manage Species). Project activities would occur on the existing road prism, abandoned roads, disturbed sites, and on very small undisturbed patches in a young forest, such that this action would not appreciably alter the quality or quantity of the adjacent terrestrial habitats that may be used by any species of concern.

Cumulative Effects

There are no negative effects expected to occur to any wildlife species or wildlife habitats as a result of the cumulative effects of culvert replacements. To the extent that new culverts may facilitate better dispersal of stream and riparian associated wildlife species (especially amphibian species), the populations of some of these wildlife species should improve.

Project 3 (Conifer Release – Alder Thinning)

Direct and Indirect Effects

Due to the proximity of the proposed treatment units to an occupied murrelet site and to other unsurveyed suitable habitat, this action would be considered a **may affect, likely adverse affect** to spotted owls and marbled murrelets if implemented during the critical part of the breeding period (March 1 to August 5). If implemented during the period August 6 to September 30, project activities would be considered a **may affect, not likely adverse affect**. Formal consultation with the U. S. Fish and Wildlife Service has addressed these potential impacts to federally listed wildlife species. A Biological Opinion (BO) received from the Service on April 4, 2002 (reference # 1-7-02-F-422) concluded that these types of projects would not likely result in jeopardy to any listed species. All applicable Terms and Conditions required by the BO have been incorporated into the design features of the proposed project. The quality and quantity of hardwood habitats available for Special Status Species or Special Attention Species within the project area would not be appreciably diminished, because this project would retain existing coarse woody debris, create only a minor amount of ground disturbance, and temporarily reduce canopy closure on just a few units that represent a very small percentage of available hardwood stands within the project area.

Cumulative Effects

Within the upper portion of the Five Rivers/Lobster Creek watershed (all tributaries above the confluence with Bear Creek; 8,500 acres on BLM) there are at least 3,000 acres of BLM forest stands that have red alder as a partial or prominent component. Most of these stands (2,175 acres) fall within Riparian Reserves. Since 1993, BLM has conducted conifer release and patch cuts on less than 100 acres of alder dominated hardwoods in Riparian Reserves. The proposed thinning action would re-thin about 35 acres of these stands. This proposed project would not result in negative effects to any wildlife species or wildlife habitats as a result of the cumulative effects of conifer release in this watershed for the following reasons:

- the cumulative amount of treated alder stands represents a small proportion (<7%) of the available hardwood habitats within the sub-watersheds of the project area; and
- key habitat components of the treated stands (coarse woody debris, shrub condition and diversity, and canopy closure) would be temporarily reduced but not removed, thereby continuing to provide usable habitat.

Project 4 (Conifer Release – Release Scattered Conifers)

Direct and Indirect Effects

This proposed project would have the same effects as described for Project 3. The amount of treatment area is larger (about 70 acres), but the impact to canopy closure would be minor since only a small number of hardwood trees would be removed from around scattered conifers. The quality and quantity of available hardwood habitats would not be appreciably affected.

Cumulative Effects

This proposed project would have the same cumulative effects as described for Project 3.

Project 5 (Conifer Release – Patch Cuts)

Direct and Indirect Effects

This proposed project would have the same effects as described for Project 3. The amount of treatment area is very small and represents a negligible reduction in available hardwood habitats for this project area.

Cumulative Effects

This proposed project would have the same cumulative effects as described for Project 3.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Project 1 (Road Decommissioning) and Project 2 (Culvert Replacement)

There is no change in the project design to these projects under this alternative. Therefore, the direct, indirect, and cumulative effects are the same as described for the proposed action.

Projects 3, 4, and 5 (Conifer Release)

The effects of this alternative are nearly identical to the effects described for the proposed action. However, under this alternative, the retention of all felled hardwoods on site would boost the

amount of coarse woody debris considerably. This may benefit some wildlife species that are associated with down wood. The sudden pulse of fresh downed wood may heighten the risk of triggering a localized outbreak of forest insect pests that may do damage to surrounding forest stands.

Alternative 3: Replace Culverts in Project 2, Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads.

Project 1 (Road Decommissioning), Projects 3, 4, and 5 (Conifer Release)

There is no change in the project design to these projects under this alternative. Therefore, the direct, indirect, and cumulative effects are the same as described for proposed action.

Project 2 (Culvert Replacement)

Under this alternative, bypass roads would not be constructed around the culvert sites, thereby reducing the ground disturbance to near zero. No terrestrial habitats would be modified by this alternative.

Alternative 4: No Action

This alternative would result in no change to the affected environment of any project. Potential benefits to wildlife species from road decommissioning would not be achieved in this alternative.

I. Recreation/Rural Interface

Recreation/Rural Interface: Affected Environment

Project 1 (Road Decommissioning)

All roads proposed for decommissioning are dead end spur roads no longer needed for management, with the exception of Road 15-8-35, which is used by local residents and tourists as a route between the Lobster Creek area and Eugene. The alternative route, Roads 15-8-15 and 15-8-17, is considerably longer.

All roads proposed for decommissioning are likely used for dispersed recreation such as hunting, although many of them are overgrown and/or impassable to vehicles.

Project 2 (Culvert Replacement)

The culverts are located on the South Fork Alsea Access Road, a BLM Backcountry Byway (14-6-34.1). Local residents and recreation visitors use the road as an alternate route between Highway 99 and Highway 34. It also provides access to two developed parks, five dispersed recreation sites and several biking and hiking trails. It is the primary access used by recreation visitors to Alsea Falls Recreation Site, whose busiest time of the year is mid-May through September.

Projects 3, 4, and 5 (Conifer Release)

There are no developed recreation sites in or near the proposed project areas, although the area is used for dispersed recreation, such as hunting, and by local residents for firewood cutting and collecting special forest products.

There are residences near the proposed project areas (Cefir Camp and Lobster Valley).

Recreation/Rural Interface: Environmental Effects

Alternative 1: Proposed Action

Project 1 (Road Decommissioning)

Closing Road 15-8-35 may be unpopular with local residents and tourists because it would mean they would have to take the longer route to Eugene.

Removing the I-beam structure on South Fork Lobster Creek (in conjunction with closing Road 15-8-35) would likely enhance fish habitat, possibly increasing recreational fishing (cutthroat trout) downstream.

Reducing road miles in the watershed may increase big game animal habitat providing hunters with greater chances of a successful season.

Project 2 (Culvert Replacement)

Constructing temporary bypasses on the South Fork Alsea Access Road during culvert replacement operations would keep traffic flowing for local residents and tourists during the peak traffic season, and would prevent disruption of the recreation season at the developed parks and dispersed recreation sites.

Projects 3, 4, and 5 (Conifer Release)

Cutting and yarding alder would have no long-term effect on dispersed recreation in the Lobster Creek area. There may be short-term localized disruption during yarding operations.

Alternative 2: Leave Felled Alders on Site in Projects 3, 4, and 5

Projects 1 (Road Decommissioning) and Project 2 (Culvert Replacement)

This alternative would have the same environmental effects as Alternative 1 as all design features for these projects remain the same.

Projects 3, 4, and 5 (Conifer Release)

Leaving cut alder on site may have some short and long term effects on dispersed recreation, as it could impede foot traffic through the proposed project areas.

Alternative 3: Replace Culverts in Project 2, Close the South Fork Alsea Access Road Instead of Constructing Bypass Roads

Project 1 (Road Decommissioning) and Projects 3, 4, and 5 (Conifer Release)

This alternative has the same environmental effects as Alternative 1 as all design features for these projects remain the same.

Project 2 (Culvert Replacement)

Closing the South Fork Alsea Access Road for the duration of the proposed projects would reduce visitation and income at Alsea Falls Recreation site, and reduce visitation to other developed and dispersed sites in the area. Not all tourists and visitors know the alternate route through the town of Alsea, and others may not be willing to travel the longer distance required (an extra hour) from Monroe on Hwy 99 to Alsea on Hwy 34.

Alternative 4: No Action

Project 1 (Road Decommissioning)

Roads proposed for decommissioning would remain open, including Road 15-8-35 which would remain available to local residents and tourists as a route between Lobster Valley and Eugene.

Project 2 (Culvert Replacement)

If culverts on the South Fork Alsea Access Road are not replaced, the road may eventually fail, causing traffic delays for local residents, tourists and recreationists.

Projects 3, 4, and 5 (Conifer Release)

Existing conditions for local residents and recreationists would continue.

J. Visual Resources

Visual Resources: Affected Environment

Projects 1, 3, 4, and 5

The proposed projects occur in Visual Resource Management (VRM) Classes 3 and 4. Projects in VRM Class 3 are required to partially retain the existing character of the landscape while not attracting the attention of the casual observer. Projects in VRM Class 4 are allowed major modifications of the existing landscapes while attempting to minimize visual disturbances.

Project 2

The proposed project areas occur in VRM Class 2, where projects may be seen but should not attract the attention of the casual observer, and the character of the landscape should not be changed in the long term.

Visual Resource Management: Environmental Effects

All projects

The proposed projects meet the requirements for visual resource management. The proposed projects may attract attention during operations, but there would be no long-term visual disturbance resulting from any of them.

IV. Consultation

The following BLM resource specialists have taken part in the Environmental Assessment process and/or have provided input for this document.

Name	Resource	Date	Initials
Ron Exeter	Botany	April 23, 2003	R.E.
Tom Vanderhoof	Cultural	4-22-03	TMV
Scott Hopkins	Terrestrial Wildlife	4-21-03	SH
Steve Liebhardt	Fisheries	4/21/03	SL
Tom Tomczyk	Soils	4/21/2003	TST
Ashley La Forge	Hydrology	4/23/03	Alf.
Carolyn Sands	NEPA	4/23/03	CS
Steve Baldwin	Biological Technician	4-23-03	SB
Traci Meredith	Recreation Planner/VRM	4/24/03	TMM
Dan Schreindorfer	Forester	4/23/03	DS
Jim Mosley	Forestry Technician	4-21-2003	JM
Amy Haynes	Program Lead/Ecologist	4/24/03	AH

STEVE CYRUS ENGINEER 4/21/2003 S.C.

V. References

Chan, S., K. Maas-Hebner, and B. Emmingham. 1996. "Thinning hardwood and conifer stands to increase light levels: have you thinned enough?" *COPE Report* 9(4):2-5.

Tappiener, J., J. Zasada, P. Ryan, and M. Newton. 1991. Salmonberry clonal and population structure: the basis for a persistent cover. *Ecology*: 72(2): 609-618.

APPENDIX A: ENVIRONMENTAL REVIEW SUMMARIES

ENVIRONMENTAL ELEMENTS REVIEW SUMMARY

The following table summarizes environmental features, which the Bureau of Land Management is required by law or policy to consider in all Environmental Documentation (BLM Handbook H-1790-1, Appendix 5: Critical Elements of the Human Environment). Information in the table applies only to the proposed action.

Environmental Feature	Affected/May Be Affected/Not Affected	Remarks
Air Quality	Affected	Pile burning would be accomplished in compliance with the Oregon Smoke Management Plan (Projects 3, 4, 5)
Areas of Critical Environmental Concern	Not Affected	
Cultural, Historic, Paleontological	Not Affected	Survey not required per protocol approved Aug. 1998 (contract suspends operations if discovery)
Prime or Unique Farm Lands	Not Affected	None present
Invasive, Non-native Species	Not Affected	Does not introduce new or increase spread of existing non-native species
Environmental Justice	Not Affected	Project would not have disproportionately high or adverse human health or environmental effects on minority populations or low income populations.
Flood Plains	Not Affected	No development in flood plains
Native American Religious Concerns	Not Affected	
Threatened, Endangered, or Special Status Plant Species or Habitat	Not Affected	No known sites found. See Chapter III Vegetation
Threatened, Endangered, or Special Status Animal Species or Habitat	Wildlife: May Be Affected Fish: May Be Affected	All appropriate mitigation has been incorporated into design features. See Wildlife, Special Status/Attention Species, Chapter III See Fisheries, Section III
Hazardous or Solid Wastes	Not Affected	

Environmental Feature	Affected/May Be Affected/Not Affected	Remarks
Drinking or Ground Water Quality	Not Affected	
Wetlands or Riparian Reserves	Affected	See Riparian, Chapter III
Wild and Scenic Rivers	Not Affected	
Wilderness	Not Affected	

COMMON ISSUES REVIEW

Resources	Affected/May Be Affected/Not Affected	Remarks
Special Attention Animal Species and Habitat	Affected	All sites found have been protected
Special Attention Plant Species and Habitat	Not Affected	No sites found
Minerals	Not affected	
Land Uses	Not affected	
Soils & Sedimentation	Affected	See Chapter III, Soils section.
Water: DEQ 303(d) listed streams	Affected	See Chapter III, Water section
Water Temperature	Not affected	
Water Quantity	Not affected	
Rural Interface Areas	Not affected	See Chapter III, Recreation/Rural Interface section

APPENDIX B: PROJECT MAPS



APPENDIX C: SUMMARY OF ENVIRONMENTAL EFFECTS

Table 1: Project 1 (Road Decommissioning)

Alternative	Vegetation/Riparian	Water	Soils	T&E Species (Aquatic and Terrestrial)	Recreation/Rural Interface
Alternative 1 Proposed Action	Scattered trees removed; effects on existing vegetation would be minimal	Short term local disturbance to water quality and channel function. Long term restoration of channel function and improved water quality.	Short term possible increase in soil erosion where culverts are removed/drain dips constructed. Long term, would return approximately 10.5 acres of non-forest road to a forest condition	Aquatic: May affect, not likely to adversely affect Oregon Coast Coho. Minor direct effects to fish due to short duration of projects. Long-term improvement of water quality, riparian, and aquatic conditions. Terrestrial: May affect, not likely to adversely affect spotted owls or marbled murrelets if done after Aug. 5. Human access/disturbance levels reduced	Closing Rd 15-8-35 may be unpopular with local residents. Big game habitat enhanced, hunting success increased.
Alternative 2 Alders not Yarded	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1
Alternative 3 No Bypass Roads	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1
Alternative 4 No Action	Vegetation remains in current condition.	Roads intercept natural flow paths and contribute sediment to streams.	Roads would remain in current condition; 10.5 acres would remain as road.	Aquatic: Current water quality, riparian and aquatic conditions maintained. Terrestrial: Current human access/disturbance levels remain	Roads remain open, access continues in current condition.

APPENDIX C: SUMMARY OF ENVIRONMENTAL EFFECTS

Table 2: Project 2 (Culvert Replacement with Bypass Roads)

Alternative	Vegetation/Riparian	Water	Soils	T&E Species (Aquatic and Terrestrial)	Recreation/Rural Interface
Alternative 1 Proposed Action	Scattered individual trees removed, minimal effects to existing vegetation. No long term effects to species or stand diversity.	Short term direct disturbance to water quality and channel function. Long-term improvement of hydrologic function.	Soil disturbance for the three sites would be up to ½ acre of riparian habitat.	Aquatic: May affect, not likely to adversely affect Oregon Coast Coho. Small short-term increase in turbidity with minor effects to fish. Long term restored fish passage. Terrestrial: No effect for spotted owls or marbled murrelets.	Constructing temporary bypasses would keep traffic flowing for local residents and tourists during the peak traffic season, and would prevent disruption of the recreation season at parks and recreation sites in the area.
Alternative 2 Alders not Yarded	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1
Alternative 3 No Bypass Roads	No trees or vegetation disturbed for bypass roads. Minimal vegetation disturbed during culvert replacement.	Any potential effects to hydrologic regime from constructing bypasses eliminated.	Aerial extent of ground disturbance would be minimized. ½ acre of riparian habitat would not be converted to temporary road.	Aquatic: Potential effects from bypass construction (sedimentation, alteration of natural flow path, removal of vegetation) would not occur Terrestrial: Same effects as Alt. 1	Closing Access Road would reduce visitation and income at Alsea Falls Recreation Site, and disrupt traffic flow for local residents and tourists.
Alternative 4 No Action	Vegetation remains in its current condition. Eventual culvert failure may cause loss of adjacent vegetation including trees.	Existing water quality conditions, stream flows, and channel conditions continue in current trends.	There would be no change in soils from their current condition.	Aquatic: Current fish passage and storm flow conditions would continue. Terrestrial: No effect	Road may eventually fail, causing traffic delays for local residents, tourists and recreationists.

APPENDIX C: SUMMARY OF ENVIRONMENTAL EFFECTS

Table 3: Projects 3, 4, and 5 (Conifer Release)

Alternative	Vegetation/Riparian	Water	Soils	T&E Species (Aquatic and Terrestrial)	Recreation/Rural Interface
Alternative 1 Proposed Action	Understory species (conifers, shrubs, forbs) would increase in growth with additional sunlight. Long-term increase in LWD potential in riparian areas. Short-term minor disturbance to vegetation from yarding.	No measurable increases in sediment delivery to streams, no significant effects expected from yarding. No increase in water temperature expected. Long term increased LWD recruitment for stream channels.	No measurable soil erosion is expected. Very little sediment production from road traffic is expected.	Aquatic: May affect, not likely to adversely affect Oregon Coast Coho. Long-term benefits include improved riparian complexity and function and increased future LWD potential. Terrestrial: May affect, not likely to adversely affect spotted owls or marbled murrelets if done after Aug 5.	No long-term effect on current recreation conditions or local residents. May be short-term localized disruption during yarding operations.
Alternative 2 Alders not Yarded	No short-term disturbance to vegetation from yarding. No exposed mineral soil, less risk of noxious weeds. No damage to understory or planted conifers due to yarding.	No potential soil compaction or sedimentation from yarding corridors.	No impacts to soils or stream turbidity from yarding or hauling of logs.	Aquatic: Effects similar to Alternative 1, but any disturbance to streams from yarding would be eliminated. Terrestrial: Effects nearly identical to Alternative 1, but retention of all felled hardwoods would boost coarse woody debris.	Could have some effect on recreation: leaving alders on the ground could impede foot traffic through project areas
Alternative 3 No Bypass Roads	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1	Same effects as Alt. 1

Alternative	Vegetation/Riparian	Water	Soils	T&E Species (Aquatic and Terrestrial)	Recreation/Rural Interface
Alternative 4 No Action	Overtopped conifers die. Long-term permanent alder stands along streams in watershed. No long term increase in quality LWD potential.	No potential soil compaction or sedimentation from yarding corridors LWD potential remains in current condition.	No change in current soil conditions.	Aquatic & Terrestrial: No change in current conditions.	Existing conditions for recreation and local residents would remain.

APPENDIX D: AQUATIC CONSERVATION STRATEGY OBJECTIVES REVIEW SUMMARY*

* Only the Proposed Action is addressed in this summary. Other alternatives would cause fewer disturbances, therefore if the Proposed Action meets ACS objectives, the others will also.

(Note - See RMP pg 5-6 for more detailed explanations of the ACS objectives)

ACS Objective	How Project Meets the ACS Objective
1. Maintain and restore distribution, diversity, and complexity of watershed and landscape features to ensure protection of aquatic systems.	<p>Project 1 (Road Decommissioning) The proposed project is designed to reduce erosion and minimize the risk of potential erosion. Road closure would maintain and restore functions such as flow and sediment routing at the watershed or landscape scale.</p> <p>Project 2 (Culvert Replacement) Replacing 3 failing culverts with structures designed for 100 year flood events and fish passage would maintain watershed and landscape features to ensure protection of aquatic systems. The proposed action, when combined with other proposed actions in the Upper Alsea and Five Rivers/Lobster Creek watersheds, is unlikely to have detrimental cumulative effects on the hydrologic regime. (EA p.39)</p> <p>Project 3, 4, and 5 (Conifer Release) The cumulative amount of treated alder stands represents a small proportion (<7%) of the available hardwood habitats within the sub-watersheds of the projects areas. Key habitat components would be temporarily reduced but not removed, thereby continuing to provide useable habitat. (EA p. 48) Therefore, distribution, diversity and complexity of watershed and landscape features would be maintained.</p>
2. Maintain and restore spatial connectivity within and between watersheds.	<p>Project 1 (Road Decommissioning) This project has the potential to return approximately 10.5 acres of land, currently designated as non-forest road to a forested condition (EA p. 30), restoring connectivity within the watershed.</p> <p>Project 2 (Culvert Replacement) Aquatic connectivity would be enhanced by the replacement of 3 failing culverts with culverts designed to allow fish passage.</p> <p>Project 3, 4, and 5 (Conifer Release) Aquatic connectivity would be enhanced by the short-term addition of down wood (alder) to streams and the long-term addition of quality conifer large woody debris potential.</p>

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<p>3. Maintain and restore physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.</p>	<p>Project 1 (Road Decommissioning) During culvert and trash rack removal, increases in stream sedimentation and resulting turbidity can be expected as equipment is operating in the stream channel. However, construction would occur under minimal flow conditions and sediment increases are not expected to significantly exceed current levels. Other activities (such as ripping, blocking entrances, etc) are not likely to significantly alter water quality or channel function (EA p.38)</p> <p>Project 2 (Culvert Replacement) Culvert replacement necessitates operating machinery in the stream channel, which can compact stream bed substrates, alter bed form and increase sedimentation in the stream system. However, any disturbance is likely to be short term and design features would be implemented to minimize potential impacts to the hydrologic system. In the long term, the replaced culverts are expected to perform better than the existing worn culverts and improve hydrologic function. Because the new culvert widths would be sized at full bank flows, they are not expected to greatly impede channel function (channel shape and stream flow migration) (EA p.39).</p> <p>Projects 3, 4, and 5 (Conifer Release) Disturbance to channel function is likely to be low, since the only activity that would occur directly in stream channels is alder felling into streams (EA p. 40). Physical integrity of the aquatic system, including shorelines, banks and bottom configurations would be maintained.</p>
<p>4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.</p>	<p>Project 1 (Road Decommissioning) In the long term, road decommissioning is likely to help restore channel function and improve water quality. Culvert removal and drain dip installation would help restore natural flow paths. Ripping stabilizing, and felling alders into the roadbed is likely to reduce runoff channeling, thereby reducing the potential for soil erosion and sedimentation into streams. Removal of the trash rack would also help restore the natural transport of woody debris in the Lobster Creek system (EA p38).</p> <p>Project 2 (Culvert Replacement) The project is likely to cause some short term direct disturbance to water quality, but in the long term, the replaced culverts are expected to perform better than the existing worn culverts and improve hydrologic function (EA p. 38-39)</p> <p>Projects 3, 4, 5 (Conifer Release) It is unlikely that the proposed projects would lead to measurable increases in sediment delivery to stream, stream turbidity, the alteration of stream substrate composition, or sediment transport regime. Stream buffers would eliminate disturbance of streamside vegetation (EA p. 39).</p>

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5. Maintain and restore the sediment regime under which system evolved.	<p>Project 1 (Road Decommissioning) Ripping stabilizing, and felling alders into the roadbed are likely to reduce runoff channeling, thereby reducing the potential for soil erosion and sedimentation into streams (EA p.38).</p> <p>Project 2 (Culvert Replacement) Culvert would increase short-term sedimentation in the stream system. However, design features would be implemented to minimize potential effects to the hydrologic system (EA p. 38-39 and Design Features pp. 17-19)</p> <p>Projects 3, 4, 5 (Conifer Release) It is unlikely that the proposed projects would lead to measurable increases in sediment delivery to stream, stream turbidity, the alteration of stream substrate composition, or sediment transport regime. Stream buffers would eliminate disturbance of streamside vegetation (EA p. 39)</p>
6. Maintain and restore in-stream flows.	<p>Project 1 (Road Decommissioning) and Project 2 (Culvert Replacement) Proposed projects would entail removing as few trees as necessary to complete the project. Therefore, direct effects from this project on cumulative effects to streamflow are too small to be measured with reasonable accuracy (EA p. 40-41)</p> <p>Projects 3, 4, 5 (Conifer Release) Proposed projects would affect less than 0.1% of forest cover in the watershed and would only affect 0.7% of the Upper Lobster Creek 6th field forest cover. Therefore, direct effects from this project on cumulative effects to streamflow are too small to be measured with reasonable accuracy (EA p. 41)</p>
7. Maintain and restore the timing, variability and duration of floodplain inundation and water table elevation in meadows and wetlands.	<p>All Projects The proposed action would not alter existing patterns of floodplain inundation or water table elevation as it would have no effects or only negligible short-term negative effects on existing flow patterns and stream channel conditions. In the long term, conifer release and resulting potential increase in quality LWD recruitment would likely slow stream velocities, increase the retention of channel substrates, and add channel complexity (EA p. 40)</p>
8. Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide thermal regulation, nutrient filtering, and appropriate rates of bank erosion, channel migration and CWD accumulations.	<p>Project 1 (Road Decommissioning) Roads would be closed and stabilized using equipment and methods designed to minimize disturbance to existing vegetation. (EA p. 25). Over the long term approximately 10.5 acres currently designated as non-forest roads would be returned to forested conditions (EA p.30)</p> <p>Project 2 (Culvert Replacement) Projects would require removal of localized vegetation, including occasional trees. Where appropriate, conifers would be replanted in disturbed areas. In the long term these projects would have no effect on species or stand structural diversity (EA p. 30)</p> <p>Projects 3, 4, 5 (Conifer Release) Because all species but alder would remain within the project areas, and only a relatively small number alders would be removed, these projects would have no negative effect on species or stand structural diversity (EA p.27).</p>

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<p>9. Maintain and restore habitat to support well distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species</p>	<p>Project 1 (Road Decommissioning) There are no negative effects expected to occur to any habitats as a result of decreasing road densities. It is likely that the condition and population trends of some species would improve as a result of reduced disturbance along roads (EA p.47)</p> <p>Project 2 (Culvert Replacement) There are no negative effects expected to occur to any habitats as a result of culvert replacements. To the extent that new culverts may facilitate better dispersal of stream and riparian associated wildlife species (especially amphibian species), the populations of some of these wildlife species should improve (EA p. 47)</p> <p>Projects 3, 4, 5 (Conifer Release) Proposed projects would not result in negative effects to any habitats because the cumulative amount of treated alder stands represents a small proportion (<7%) of the available hardwood habitats within the sub-watersheds and key habitat components of the treated stands (coarse woody debris, shrub condition and diversity, canopy closure) would be temporarily reduced but not removed, thereby continuing to provide usable habitat (EA p. 48)</p>